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(54) SANDING BACKING PAD

(57) The object of the invention is a sanding backing pad. The backing pad comprises two separate parts. A first part, or flange, forms the main part of the backing pad and is adapted to be connected with the polisher, and a second part, or base, is adapted to be reversibly connected to the flange and comprises a surface adapted to house an abrasive sheet. Said surface adapted to house the abrasive sheet may be provided with reversible engagement means adapted to be connected to a surface of the abrasive sheet provided with corresponding engagement means.

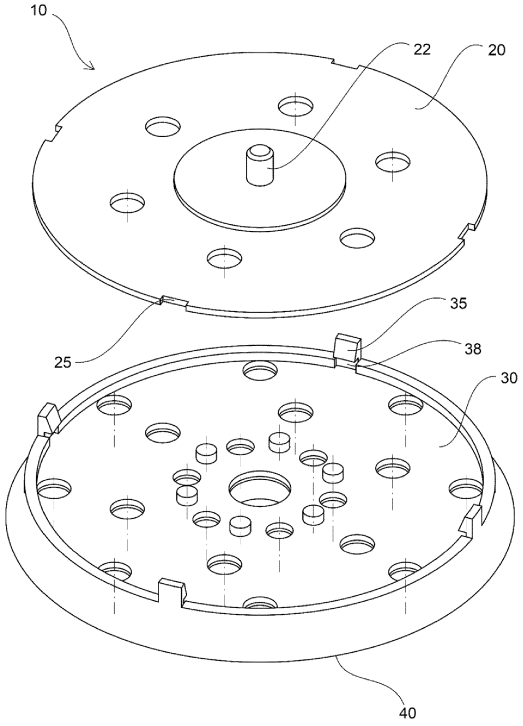

Fig. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a tool for sanding surfaces, in particular to backing pads used with said tools.

KNOWN PRIOR ART

[0002] As is known, backing pads for sanding or polishing surfaces are used in order to effectively sand surfaces, for example to remove layers of overlying material (such as, for example previous painting, layers of car body filler, etc.). The backing pads comprise a working surface on which an abrasive layer is applied.

[0003] Said abrasive layer generally consists of a sheet of various thickness having one of the two surfaces consisting of abrasive material. This sheet is applied to the backing pad, which consists of a (usually disc-shaped) body in the middle of which there is, perpendicularly thereto and to the surface opposite to the one on which the abrasive surface is fixed, a shaft adapted to be engaged, for example with the corresponding connection means of a rotating spindle of a polisher. Said shaft may be fixed to the backing pad or may be removable and adapted to be engaged both with the backing pad and with the aforesaid spindle of a polisher.

[0004] The abrasive sheet adheres to the backing pad by means of specific mutual engagement means arranged on the surface of the sheet opposite to the abrasive surface, and on the surface of the backing pad opposite to the one facing the spindle of the polisher.

[0005] The engagement between backing pad and abrasive part is to be such as to allow the perfect adhesion during the sanding, but also an easy removal when the abrasive surface is worn and therefore it is required to remove the abrasive sheet from the backing pad; said engagement means are made, for example by means of adhesive materials, tear-off materials such as Velcro™, or by means of other similar engagement pressure-fitting materials and materials of the hook-and-loop type.

[0006] Considering the type of work to which it is subjected, it is apparent that the abrasive sheet is subject to progressive wear and that therefore it is to be replaced with a new abrasive sheet after a given number of sanding operations. It is also clear that due to the frequent replacements of the abrasive sheet, also the engagement means with the abrasive sheet on the surface of the backing pad are subjected to increasing wear up to the point in which it becomes necessary to replace the whole backing pad to ensure the correct adhesion of the abrasive sheet. The wear of the abrasive layer therefore results in the replacement of the whole backing pad to restore the correct functionality of the polisher.

BRIEF SUMMARY OF THE INVENTION

[0007] It is the object of the present invention to create a backing pad which comprises two separable parts, a first part, or flange, which forms the main part of the backing pad and is adapted to be connected with the polisher, and a second part, or base, adapted to be reversibly connected to the flange and comprising a surface preferably provided with engagement means made, for example by means of adhesive materials, by means of tear-off materials such as Velcro™, or other similar pressure-fitting materials of the hook-and-loop type adapted to be connected with the abrasive sheet.

[0008] Said first part, or flange, is made of rigid, resistant and long-lasting materials such as, for example carbon fiber or plastic materials such as, for example nylon.

[0009] Said second part, or base, may advantageously be made of polyurethane or other plastic materials such as, for example foams or rubbers, having the required features of rigidity and hardness. Further, said base may be made of various thicknesses, densities and shapes according to needs.

[0010] The present invention allows the user to replace only the part (the aforesaid second part, or base) of the employed backing pad subject to wear, while instead keeping and preserving the flange, with obvious benefits in terms of costs, practicality and efficiency of use.

[0011] In a preferred embodiment, said second part, or base, of the backing pad is of the disposable type. In this embodiment, the abrasive sheet may also be connected to the base of the backing pad in a reversible manner by means of, for example gluing.

[0012] The present description therefore aims to reach the above-described objects by means of a sanding backing pad, said backing pad comprising a first part, or flange, which forms the main part of the backing pad and is adapted to be connected with the polisher or equivalent tool, and a second part, or base, adapted to be reversibly connected to the flange and comprising a surface preferably provided with engagement means made, for example by means of adhesive materials, by means of tear-off materials such as Velcro™, or by means of other similar pressure-fitting materials and materials of the hook-and-loop type for the connection to the abrasive sheet.

[0013] The aforesaid first part, or flange, is adapted to be connected with the polisher or equivalent tool, for example by means of a shaft configured to be engaged with a corresponding spindle of the motor of said polisher or equivalent tool. Said shaft may be fixed to the flange or may be removable and adapted to be engaged both with the flange and with the aforesaid spindle of a polisher.

[0014] An apparent advantage of the backing pad according to the present description is given by the increased flexibility of employment and by the improved efficiency of use because the presence of the aforesaid removable second part, or base, allows the replacement of the worn part of the backing pad alone, thus increasing the duration of life of the backing pad itself.

[0015] Further features and advantages of the backing pad according to the present description can be inferred from the following detailed description and from the dependent claims.

BRIEF DESCRIPTION OF THE FIGURES

[0016] Further features and advantages of the invention will be more apparent in light of the following detailed description, with the aid of the accompanying drawings, in which:

Figure 1 shows an exploded view of a backing pad according to an embodiment of the invention;
Figure 2 shows a sectional view of the backing pad in Figure 1;
Figure 3 shows a detail of the section in Figure 2;
Figure 4 shows an exploded view of a backing pad according to an alternative embodiment of the invention; and
Figure 5 shows a backing pad according to a further embodiment of the invention.

[0017] When suitable, the parts forming the apparatus according to the present description are shown in the drawings with conventional symbols, showing only those specific details which are relevant to understanding the embodiments of the present invention so as not to note details which are immediately apparent to those skilled in the art, with reference to the description herein indicated.

DETAILED DESCRIPTION OF CERTAIN PREFERRED EMBODIMENTS OF THE PRESENT INVENTION

[0018] The invention is now described with initial reference to Figure 1, which shows an exploded view of a backing pad according to an embodiment of the invention, the backing pad as a whole indicated with reference numeral 10.

[0019] The backing pad 10 comprises a flange 20 and a base 30 which is reversibly connectable to said flange 20 and is further adapted to be connected to an abrasive sheet 40, where the aforesaid abrasive sheet 40 comprises a surface consisting of abrasive material on one side and means for the connection to said base 30 on the other side.

[0020] Flange 20 is adapted to be connected with the polisher, or equivalent tool, for example by means of a shaft 22 configured to be engaged with a corresponding spindle of the motor of said polisher. Said shaft 22 may be fixed to flange 20 or may be removable and adapted to be engaged both with the flange and with the aforesaid spindle of a polisher.

[0021] Base 30 may be fixed to the abrasive sheet 40 by means of reversible means (comprising, for example layers of adhesive materials, tear-off materials such as Velcro™, or other similar pressure-fitting materials and materials of the hook-and-loop type) or irreversible means (such as, for example a layer of glue) of known type.

[0022] The fact that base 30 is removably connectable to flange 20 also allows easy disassembly and replacement operations of a worn abrasive sheet 40 or of the whole base 30 without removing flange 20 from the spindle of the polisher.

[0023] The removable-type connection of base 30 to flange 20 may be obtained in various manners.

[0024] For example, in Figure 1 and in the sections of Figures 2 and 3, base 30 is connectable to flange 20 by means of the engagement of a plurality of teeth 35 obtained on base 30, with corresponding recesses 25 obtained in flange 20. In particular, the shape of each of the teeth 35 is such as to provide a seat 38 inside of which the edge of flange 20 is engaged, as shown in detail in Figure 3.

[0025] Figure 4 shows a backing pad 10 according to an alternative embodiment of the invention.

[0026] Here, base 30 is connectable to flange 20 by means of the engagement of flange 20 in a groove 33 of base 30.

[0027] The engagement of flange 20 in a groove 33 of base 30 occurs by means of the alignment between the protrusions 37 obtained on the edge of base 30 and the corresponding recesses 25 obtained in flange 20. After the aforesaid alignment, a pressure applied on flange 20 allows the edge of flange 20 to be engaged with the groove 33 of base 30. Protrusion 39 allows flange 20 to be retained in operating position, with the edge accommodated in the groove 33 of base 30.

[0028] Figure 5 shows a backing pad according to a further embodiment of the invention.

[0029] Here, base 30 is connectable to flange 20 by means of a thread 26 obtained on the outer edge of said flange 20 and adapted to be engaged with a corresponding thread 36 obtained on an edge of base 30.

[0030] The assembly and disassembly of base 30 therefore occurs by screwing or unscrewing said base 30 along the aforesaid thread.

[0031] In a preferred embodiment of the object of the present description, the second part, or base, 30 of the backing pad is of the disposable type. In this embodiment, the abrasive sheet may also be connected to base 30 of the backing pad in a reversible manner by means of, for example gluing.

[0032] The backing pad according to the present description may advantageously be made of plastic material. In further detail, said first part, or flange, 20 may be made of rigid, resistant and long-lasting materials, including plastic materials such as, for example nylon, or materials of other type such as, for example carbon fiber. Base 30 may be made of polyurethane, foam or rubber.

[0033] The above description exemplifies the preferred embodiments. All modifications falling within the scope of protection determined with reference to the appended claims are to be considered included within the scope of

the present invention.

Claims

1. A sanding backing pad (10), said backing pad (10) comprising a flange (20) configured to be removably engaged with a polisher adapted to rotate the aforesaid backing pad (10), said flange (20) being further configured to engage with a base (30) of the disposable type, adapted to house an abrasive sheet (40) comprising an abrasive surface adapted to polish a surface to be subjected to sanding.

2. A backing pad (10) according to claim 1, **characterized in that** said base (30) comprises a side provided with connection means to said abrasive sheet (40).

3. A backing pad (10) according to claim 2, **characterized in that** said connection means to said abrasive sheet (40) are reversible and selected from the group comprising layers made of adhesive materials, layers made of tear-off materials, such as Velcro™, and layers made of pressure-fitting materials and materials of the hook-and-loop type.

4. A backing pad (10) according to one or more of claims 1 to 3, **characterized in that** said base (30) comprises, on the edge of the side adapted to be connected to the flange (20), a plurality of teeth (35) adapted to be engaged with corresponding recesses (25) obtained on the edge of said flange (20) .

5. A backing pad (10) according to claim 4, **characterized in that** said teeth (35) comprise a seat (38) adapted to accommodate the edge of the flange (20).

6. A backing pad (10) according to one or more of claims 1 to 3, **characterized in that** said base(30) comprises a groove (33) and, on the edge of the side adapted to be connected to the flange (20), a plurality of protrusions (37) adapted to be engaged with corresponding recesses (25) obtained on the edge of said flange (20) and adapted to allow the edge of said flange (20) to reach and engage said groove (33) .

7. A backing pad (10) according to one or more of claims 1 to 3, **characterized in that** said base (30) comprises, on the edge of the side adapted to be connected to the flange (20), a thread (36) adapted to be engaged with a corresponding thread (26) on the edge of the flange (20).

8. A backing pad (10) according to one or more of claims 1 to 6, **characterized in that** said flange (20) is configured to be removably engaged with a polisher by means of a shaft (22) adapted to be engaged with a corresponding spindle of the motor of said polisher.

9. A backing pad (10) according to claim 8, **characterized in that** said shaft (22) is fixed to the flange (20).

10. A backing pad (10) according to claim 8, **characterized in that** said shaft (22) is removable and adapted to be engaged with both the flange (20) and the spindle of the motor of a polisher.

11. A backing pad (10) according to one or more of claims 1 to 10, **characterized in that** said base (30) is made of a plastic material selected from the group comprising polyurethane, foams and rubbers.

12. A backing pad (10) according to one or more of claims 1 to 11, **characterized in that** said flange (20) is made of a plastic material.

13. A backing pad (10) according to one or more of claims 1 to 12, **characterized in that** said flange (20) is made of carbon fiber.

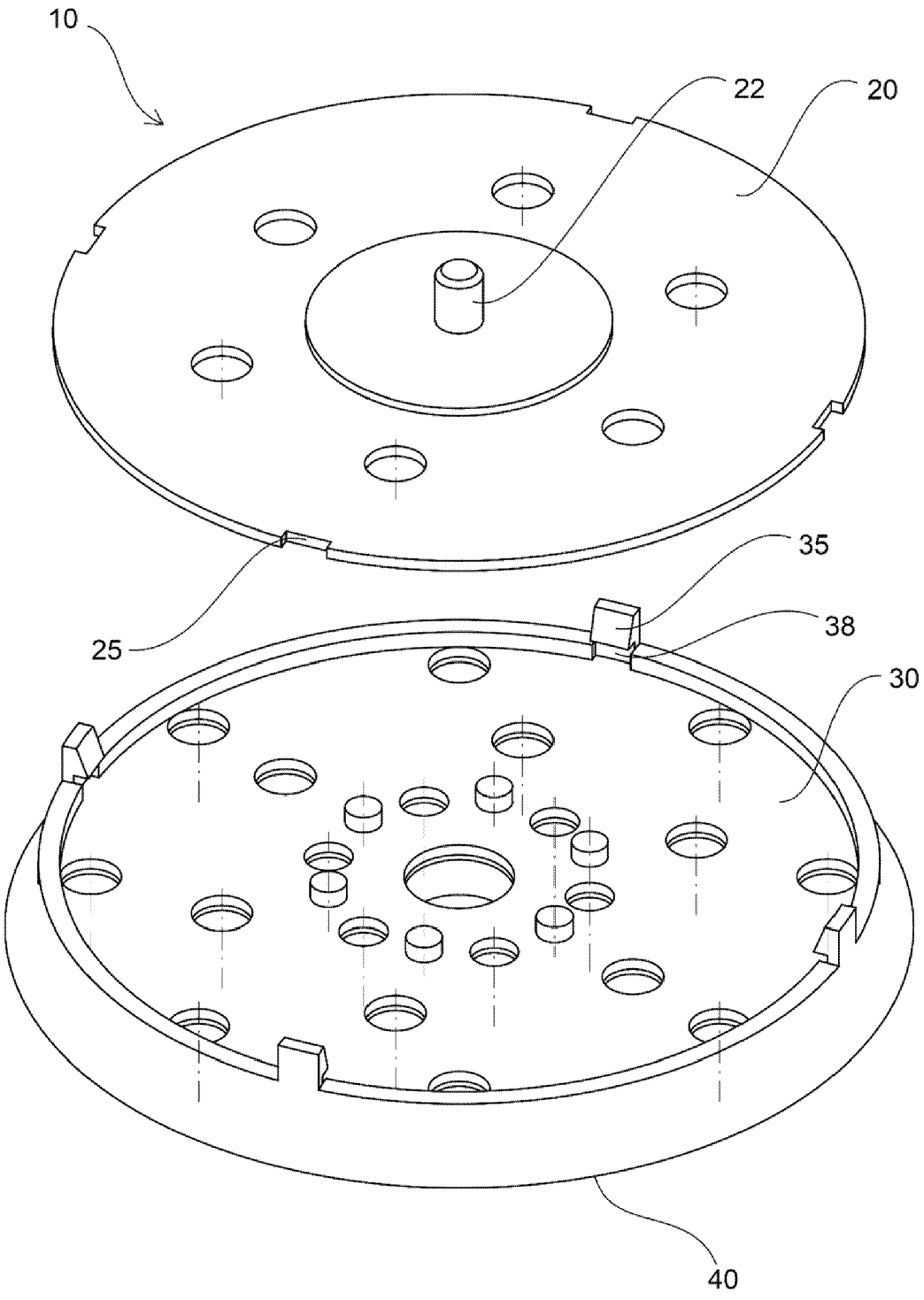

Fig. 1

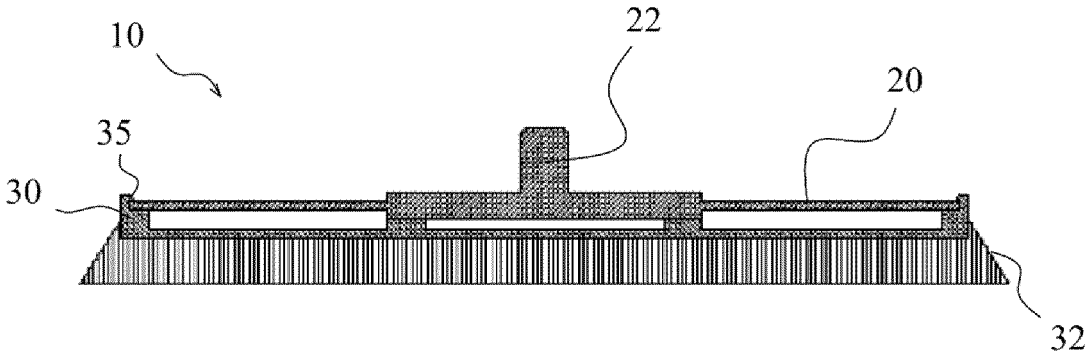

Fig. 2

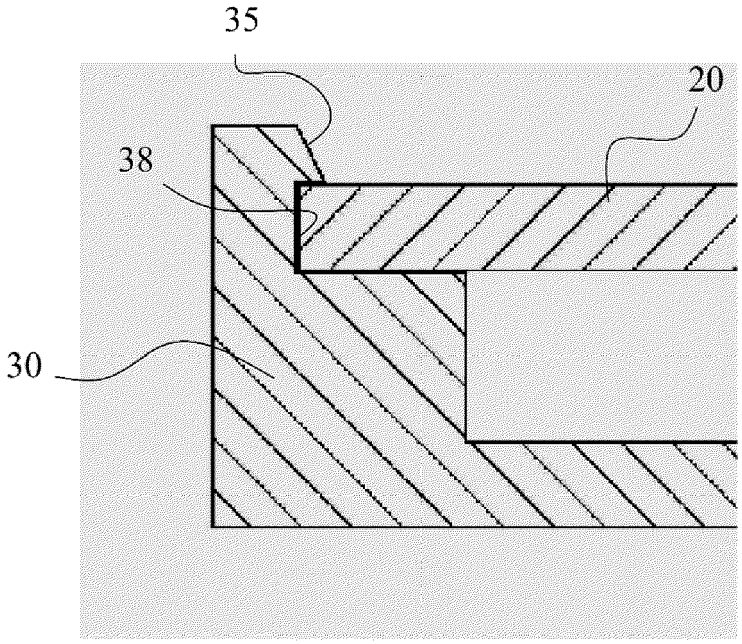

Fig. 3

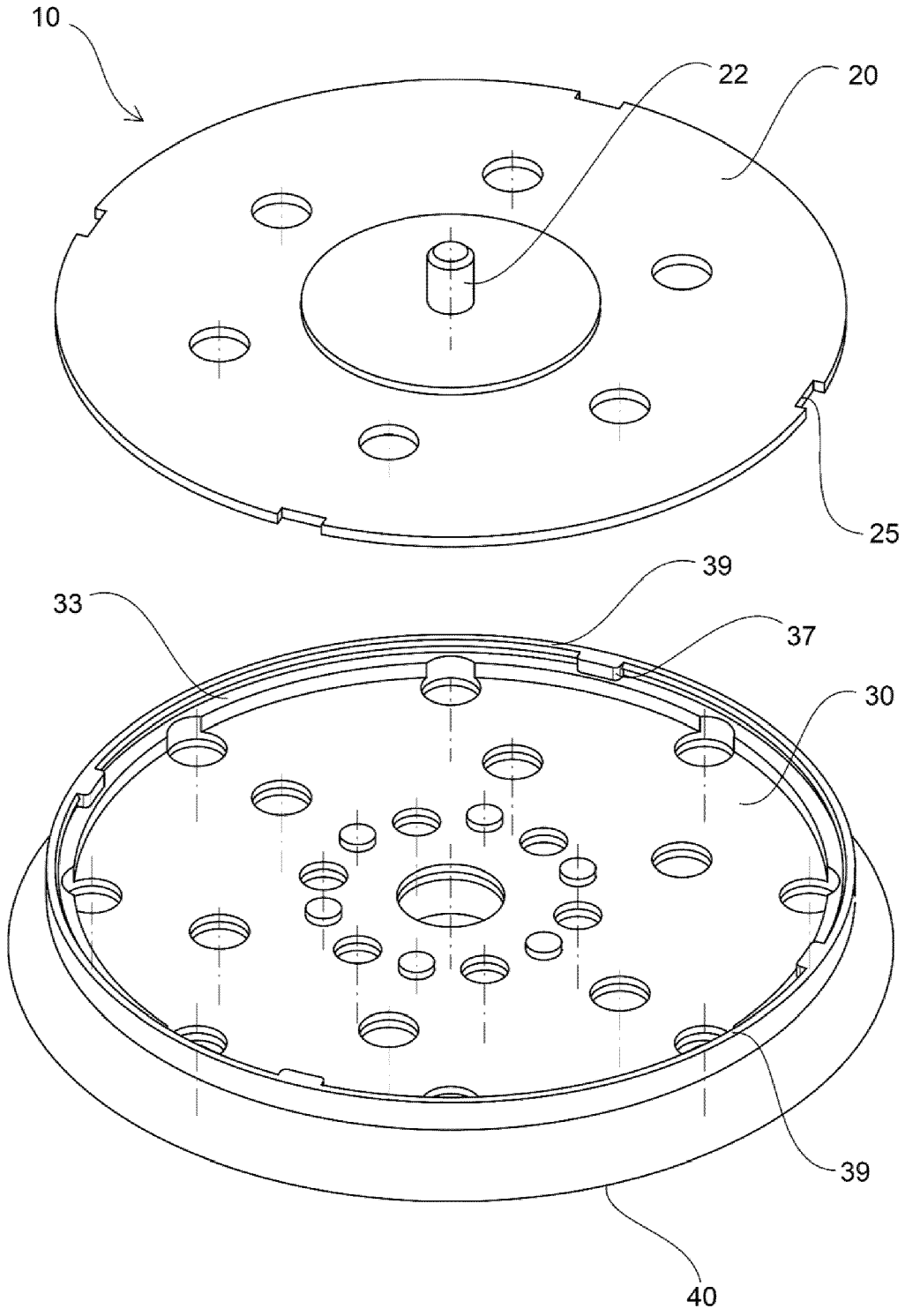

Fig. 4

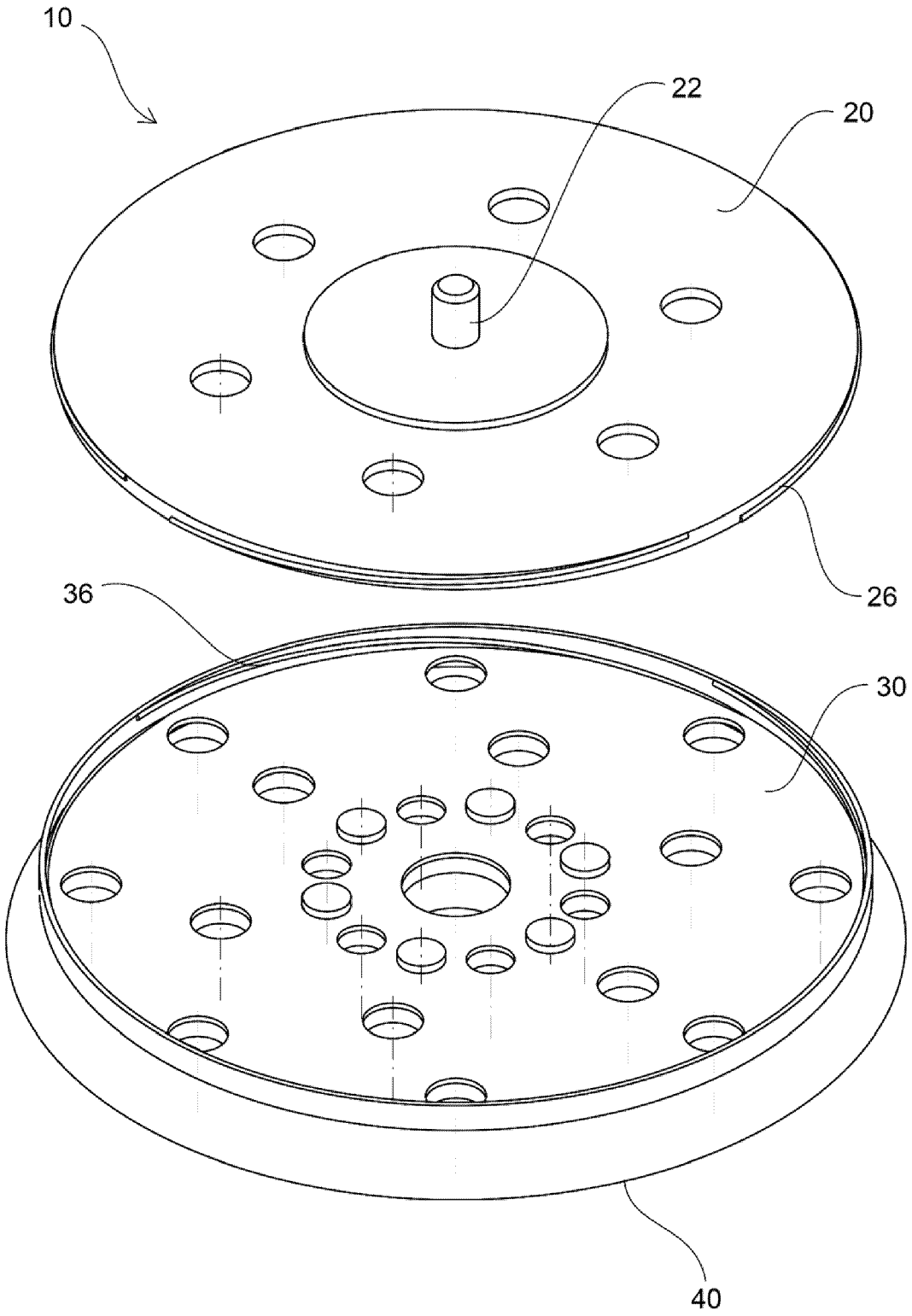

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 20 17 5166

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A	US 2007/167119 A1 (MOMOSAKI MITSUKAZU [JP]) 19 July 2007 (2007-07-19) * claim 1; figures 8-11 *	6	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	9 October 2020	Koller, Stefan

CATEGORY OF CITED DOCUMENTS

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