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(54) **Clamp for a character die applicable to manufacturing license plates, signs or the like by stamping**

(57) The present invention relates to a clamp for a character die applicable to manufacturing license plates, signs or the like by stamping, configured by two portions, a lower portion (2) and an upper portion (3), which are attached in an articulated manner by means of three thickened sections (30, 31) of the upper portion (3), a wider central section (30) and narrower side sections (31) sized to be coupled in an intercalated manner between

four partitions (20, 21) of the lower portion (2), two centre portions (20) and two side portions (21). Lugs (36) which fit in channels (23) of the central partitions (20) stem on both sides of the central thickening (30), C-shaped channels with double elbow (25) and blind spot (26) parallel to its upper entrance (24), where the lugs (36) are housed. The inner surfaces (2a and 3a) of both portions (2, 3) do or do not integrate the parts of the die having fitting elements (4).

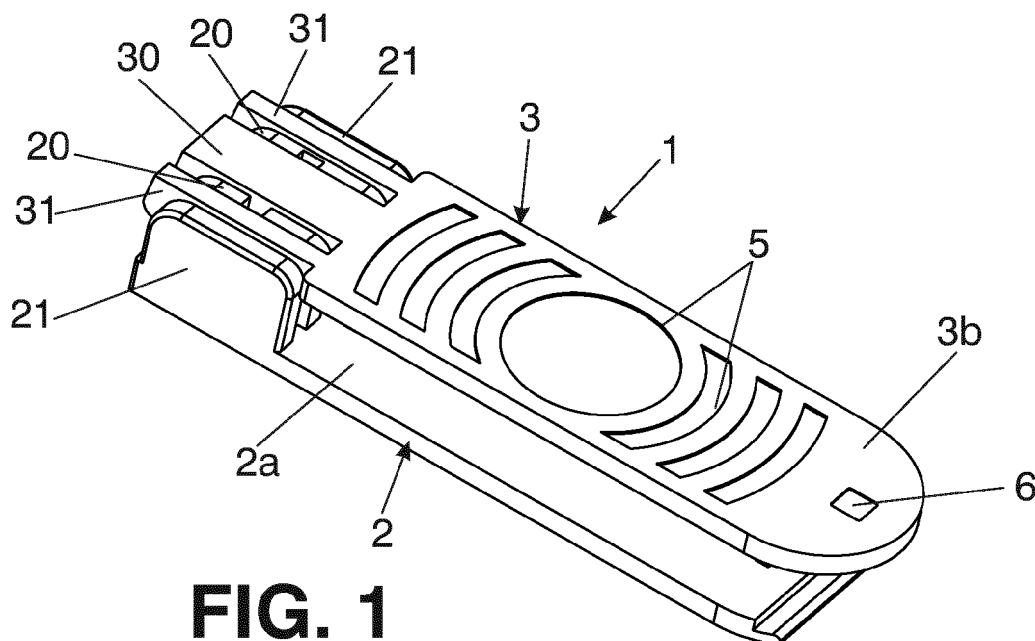
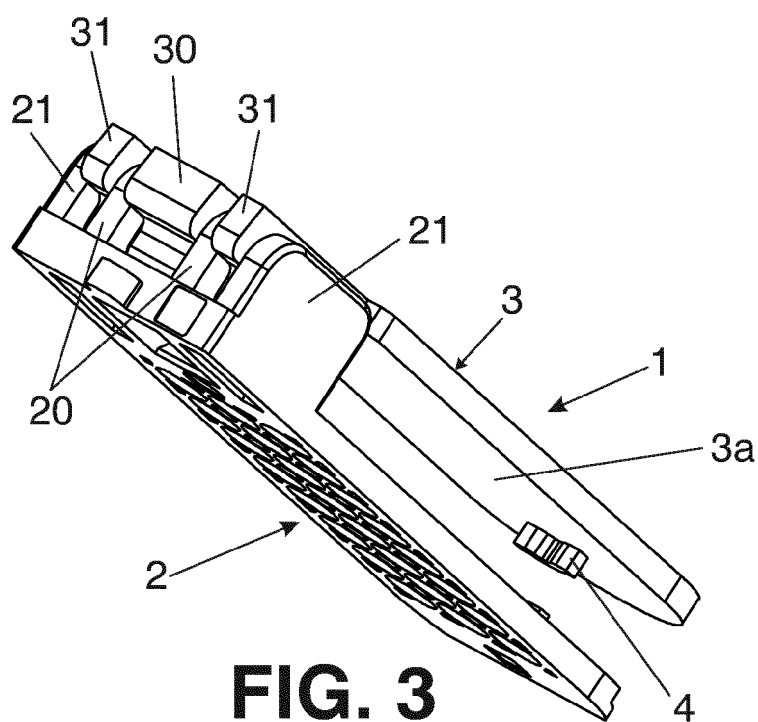
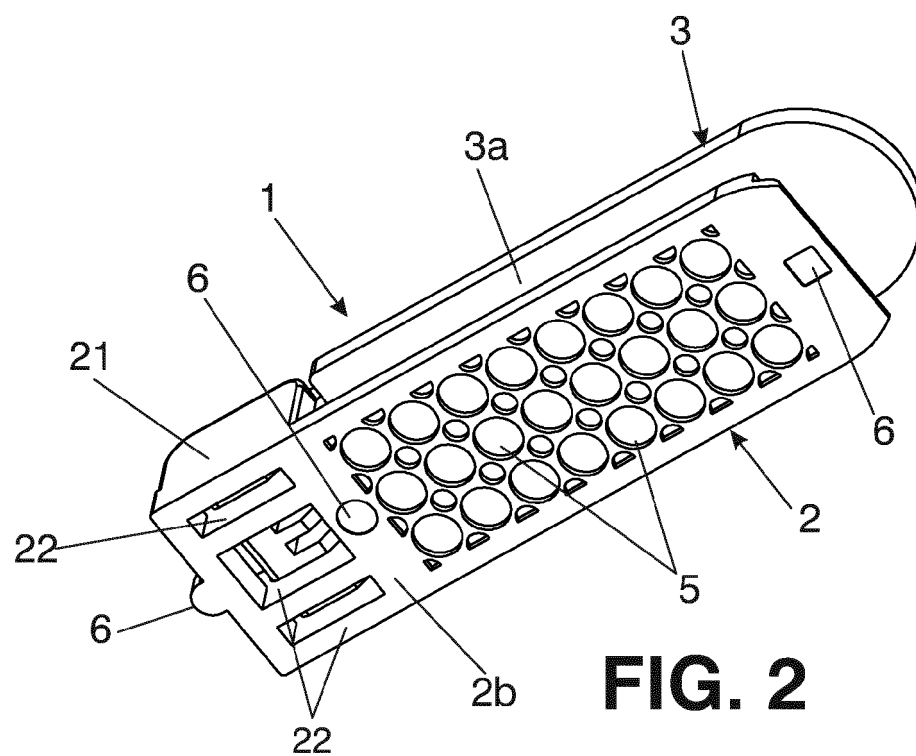


FIG. 1



Description

Object of the Invention

[0001] The invention, as stated by the title of the present specification, relates to a clamp for a character die applicable to manufacturing license plates, signs or the like by stamping, the innovative features of which provide several advantages which will be described in detail below, entailing a notable improvement with respect to that already known in its field of application.

[0002] More particularly, the object of the invention focuses on an articulated clamp intended for incorporating the male and female dies or moulds of the characters to be stamped for making license plates by means of pressing said plate between said dies, which has the particularity that, in addition to allowing the incorporation of the dies by means of different systems, either by press fitting, by means of adhesives or even by forming an integral part of the clamp itself, it has an improved system for attaching two portions integrating said clamp facilitating its assembly and disassembly without needing to use additional auxiliary means or tools for such operations, significantly simplifying its structural configuration and accordingly lowering the manufacturing cost.

Field of Application of the Invention

[0003] The field of application of the present invention falls within the technical sector of graphic arts industry, particularly focusing on that dedicated to making metal or acrylic parts, such as signs, license plates and the like by means of pressure stamping, it also encompasses the industry dedicated to performing pressure stamping in general.

Background of the Invention

[0004] Currently, and as reference to the state of the art, it must be pointed out that clamps for stamping characters intended for, as has been pointed out above, manufacturing license plates, signs or other similar elements, which however, on one hand are generally manufactured such that the two portions of the clamp make up the die of the characters to be stamped itself, whereby it is necessary to have at least one clamp with each numeric sign and alphabetic character that could be needed, are known on the market and the applicant himself is the proprietor of various documents relating to it.

[0005] Furthermore, the attachment between the two male and female portions making up the clamp, when it is articulated, since it is not always so, it tends to consist of complex mechanisms which often include additional articulating, coupling and/or fixing elements increasing the manufacturing cost of the clamp while at the same time as complicating the assembly and disassembly thereof in the handling operations for forming the plates.

[0006] Therefore, the more relevant documents con-

cerning the clamps or elements of the type regarded herein include the following:

- Invention patent ES2164596, filed in Spain in the year 2000 relates to a stamping clamp made up of two bodies. It describes a clamp made up of a male part on which there is articulated a female part as a result of an articulation found on the male part and by means of rods of female part, where the articulation part has a specific shape, with two cavities an upper cavity and another lower cavity, such that when the rods of the female part are housed in the lower cavity a maximum opening of the female part with respect to the male of 80° is achieved, and such that, when the rods are housed in the upper cavity and the female part adopts a 90° position with respect to the male part, the removal of said female part is allowed.
- Invention patent ES2284354, filed in 2005 relates to a hinged type die for pressure stamping, in which it discloses that said die has an upper part and another lower part, where the upper part is provided with lugs which when introduced in the cavities provided in the lower part and locked by means of a closing element introduced in one of said lugs, form the articulated hinge of the die, angles being provided in the projections from which there emerge the lugs regulating the opening of the die when abutting with the projections existing close to the cavities, as well as elements regulating the closing stop
- Invention patent ES2291122, filed on 2006 relates to an improved die for stamping characters for license plates. In this case the die claimed is made up of two independent bodies, a male body with a flange and a female body with coinciding grooves, coupling and closing parts being provided for locating at either ends of said bodies, a clamp being configured with the attachment articulated in its upper portion or lower portion. The male body has holes with cavities and plates coinciding with the lower portion of a coupling part which has cavities suitable for receiving lugs arranged on the projections of the female body, allowing its pivoting with respect to the male body. The closing part is provided with side lugs suitable for fitting in the recesses arranged on the upper portion of the coupling part for securing the assembly.

[0007] The objective of the present invention is to therefore develop a new model of clamp the structural configuration of which allows improving the effectiveness and versatility of the clamp and at the same time simplifying its constitution to prevent the drawbacks of the known systems described above, it must be pointed out that, the applicant is unaware of the existence of any other clamp which, being of the specific type regarded herein and being intended for the same application, has technical, structural and constitutive features similar to

those of the clamp proposed herein.

Description of the Invention

[0008] Therefore, the clamp for a character die applicable to manufacturing license plates, signs or the like by stamping proposed by the present invention is configured as a notable novelty within its field of application, since the objectives pointed out above as ideal are satisfactorily achieved in light of its implementation, the characterising details distinguishing it being conveniently listed in the final claims accompanying the present specification thereof.

[0009] What the invention specifically proposes is, as pointed out above, a clamp intended to incorporate the male and female dies or moulds of the characters to be stamped for making license plates or the like by stamping. To that end, the clamp of the invention, instead of directly incorporating or making up said die having the male and female portions of the characters already integrated in both portions of the clamp, without dismissing said possibility, preferably it does not incorporate them and said portions have internally a flat surface suitable for housing the male and female portions of said characters, which could preferably be fixed by means of adhesives.

[0010] It must be mentioned that the plates to be stamped, which can be of various types, such as license plates, signs, etc. are generally made up of sheet metal.

[0011] The characters, i.e., the male and female parts making up the die of the characters to be stamped, when they are independent to the clamp and are incorporated therein, can in turn be made of metal, cast iron, thermoplastic, etc., being able to be coupled to the inner surface of both portions of the clamp by means of adhesives, as has been pointed out above, or by pressure fitting, for which the existence of protrusions specially designed and located at both ends thereof in the inner faces of said both portions of the clamp for providing said fitting to said male and female parts, which will have different shapes for allowing the fixing of different models of male and female die parts to them has been envisaged.

[0012] In parallel and as the most significant differentiating element of the clamp proposed, it has an improved articulated attachment system between the two portions integrating it, which is designed for facilitating its assembly and disassembly without needing to use additional coupling elements.

[0013] To that end, the lower portion of the clamp has in its attachment end, a series of partitions which are alternately coupled between as many thickenings arranged on the attachment end of the upper part, there being channels in said partitions in which lugs of the thickenings acting as articulation pins fit.

[0014] The clamp can be quickly and practically assembled and disassembled into its two parts by this simple but effective manner as a result of the particular design of the mentioned channels in which the lugs fit, which channels are open to the outside but without the lugs

being able to move from their place in working position.

[0015] The clamp described for a character die applicable to manufacturing license plates, signs or the like by stamping therefore has an innovative structure with structural and constitutive features unknown until now for such purpose, reasons which added to its practical use provide it with a foundation sufficient for obtaining the privilege of exclusivity sought.

Description of the Drawings

[0016] In order to complement the description which is being made of the clamp for a character die object of the invention and for the purpose of aiding to better understand the features distinguishing it, a set of drawings is attached as an integral part of the specification in which the following has been depicted as an illustrative and non-limiting character:

Figures 1, 2 and 3 show respective perspective views of the clamp object of the invention, specifically Figure 1 shows a top view, Figure 2 shows a bottom view and Figure 3 shows a rear side view, its general configuration as well as the makeup and arrangement of the portions integrating it being seen therein. Figures 4, 5 and 6 show a top plan view, a bottom plan view and rear elevational view of the upper portion of the clamp, respectively.

Figures 7 and 8 show respective cross-section views of the section A-A shown in Figure 4 and section B-B shown in Figure 5, respectively.

Figure 9 shows an enlarged view of the detail C labelled in Figure 7, where the position of the lugs which this upper part of the clamp incorporates according to the invention is seen.

Figures 10, 11 and 12 show respective top plan view, bottom plan view and rear elevational view of the lower portion of the clamp, respectively.

Figures 13 and 14 show a cross-section view of the lower portion of the clamp according to the section D-D indicated in Figure 11 and an enlarged view of the detail E labelled in Figure 11, respectively.

Figures 15 and 16 show respective examples of the fitting elements arranged on both portions of the clamp of the invention for coupling the male and female die parts of the characters between them.

Preferred Embodiment of the Invention

[0017] In view of the mentioned drawings and in accordance with the adopted numbering, a preferred embodiment of the invention which comprises the portions and elements described in detail below can be seen therein.

[0018] Therefore, as observed in said drawings, the clamp (1) in question is configured from two independent portions, a lower portion (2) and another upper portion (3) intended for receiving the male and female parts of

the die of the characters to be stamped (not depicted) respectively, which portions (2, 3), configured by respective considerably flat and approximately rectangular bodies, have mutual coupling means for attaching them in an articulated manner to one another by one of its ends.

[0019] Said means consist of three thickened sections (30, 31), one wider central section (30) and two narrower side sections (31), arranged on one of the ends of the upper portion (3) of the clamp, determining corresponding grooves (32) separating them, which sections are sized in width to be coupled in an intercalated manner between four partitions (20, 21) of the lower portion (2) arranged in a coinciding manner for such purpose, such that there is a central gap greater than that between said central partitions (20) and the side partitions (21) of said lower portion between the two central partitions (20), gaps where the existence of holes (22) are further contemplated.

[0020] It must be mentioned that the aforementioned thickened sections (30, 31) of the upper portion (3) have, as seen in Figures 7 and 8, a side configuration which determines, at its outer edge, a step (33), while at the inner edge, a ramp (34) or progressive elevation; a ramp which, in the case of the thickened central section (30), has two recesses (35).

[0021] It is important to highlight that respective lugs (36) are contemplated on both sides of said central thickening (30), best seen in the detail of Figure 9, stemming laterally therefrom without reaching the side thickenings (31), as observed in Figure 5.

[0022] In parallel, in the central partitions (20) of the lower portion (2) there are, on both inner sides thereof, channels (23) in which the mentioned lugs (36) of the upper portion (3) described above fit, acting as articulation pins.

[0023] Said channels (23), as observed in Figure 11 and especially in Figures 13 and 14, have its entrance (24) by the upper portion of the partitions (20) and have a C-shaped configuration forming a double elbow (25) ending in a blind spot (26) parallel to the mentioned entrance (24) where the lugs (36) will be housed, one on each side.

[0024] The lugs (36) is thus fitted through the mentioned entrance (24) and once taken to the blind spot (26) of the channels (23) it will be difficult for it to come out of place, being, however, a fast and easy solution to coupling.

[0025] In addition, although both portions (2, 3) of the clamp (1) can incorporate the male and female parts making up the die of the characters to be stamped in an integrated manner, they preferably have a completely flat configuration of their respective inner surfaces (2a and 3a), thus facilitating the incorporation of said parts, which can be fixed on said surfaces by means of any securing system, preferably fixed by means of adhesives.

[0026] However it must be pointed out that for the fitting and correct positioning of such male and female parts, the existence of fitting elements (4) arranged on both

inner surfaces (2a and 3a) of both portions (2, 3) of the clamp is contemplated, arranged in matching positions at both ends thereof, as observed in Figures 5 and 11, showing respective plan views of the inner portion of the upper portion (3) and of the lower portion (2), respectively.

[0027] Furthermore, said fitting elements (4) can have different shapes and sizes, such as shown in the two examples depicted in Figures 15 and 16, to be adjusted to different models of male and female parts of the die, according to each case.

[0028] Finally, it must be mentioned that the clamp has reliefs (5) both on the outer surface (2b) of the lower portion (2) and on the outer surface (3b) of the upper portion (3), which, by forming varying designs, facilitate gripping the clamp, various positioning points (6) also being arranged in specific outer locations of the clamp for facilitating the centring and placement thereof the stamping operations.

[0029] Having sufficiently described the nature of the present invention as well as the manner of carrying it out into practice, making a more extensive explanation so that any person skilled in the art can understand its scope and the advantages derived therefrom is not considered necessary, stating that, within its essential nature it could be carried out into practice in other embodiments differing in detail from that indicated by way of example, which embodiments will also achieve the protection sought provided that their essential principle is not altered, changed or modified.

Claims

1. A clamp for a character die applicable to manufacturing license plates, signs or the like by stamping, being of the type which is configured from two independent portions, a lower portion (2) and another upper portion (3), intended for internally receiving the male and female parts of the die of the characters to be stamped, having mutual coupling means to be attached in an articulated manner to one another by one of its ends, **characterised in that** said attachment means comprise partitions (20, 21) arranged on the lower portion (2) of the clamp which are alternately coupled between thickened sections (30, 31) arranged on the attachment end of the upper portion (3), there being channels (23) in said partitions in which lugs (36) of the thickenings acting as articulation pins fit; **in that** it incorporates reliefs (5) of varying designs both on the outer surface (2b) of the lower portion (2) and on the outer surface (3b) of the upper portion (3) for facilitating the gripping; and **in that** positioning points (6) have been arranged in specific outer locations of the clamp for the centring and placement thereof.

2. The clamp for a character die applicable to manu-

facturing license plates, signs or the like by stamping according to claim 1, **characterised by** having, in the upper portion (3), three thickened sections (30, 31), one wider central section (30) and two narrower side sections (31) determining corresponding grooves (32) separating them, said thickened sections being sized in width to be coupled in an intercalated manner between four partitions (20, 21) arranged on the lower portion (2).

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3. The clamp for a character die applicable to manufacturing license plates, signs or the like by stamping according to claim 1 and 2, **characterised in that** on both sides of the central thickening (30) the lugs (36) stemming laterally therefrom are contemplated; and **in that**, in the central partitions (20) of the lower portion (2) there are channels (23) in which the lugs (36) of the upper portion (3) fit on both inner sides thereof.

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4. The clamp for a character die applicable to manufacturing license plates, signs or the like by stamping according to claims 1 to 3, **characterised in that** the channels (23) have its entrance (24) by the upper portion of the partitions (20) and have a C-shaped configuration forming a double elbow (25) ending in a blind spot (26) parallel to the mentioned entrance (24) where the lugs (36) are housed.

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5. The clamp for a character die applicable to manufacturing license plates, signs or the like by stamping according to claims 1 to 4, **characterised in that** both portions (2, 3) of the clamp (1) incorporate in an integrated manner the male and female parts making up the die of the characters to be stamped.

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6. The clamp for a character die applicable to manufacturing license plates, signs or the like by stamping according to claims 1 to 4, **characterised in that** both portions (2, 3) of the clamp (1) have a flat configuration of their respective inner surfaces (2a and 3a), suitable for incorporating the male and female parts making up the die of the characters to be stamped, which can be fixed on said surfaces by means of any securing system, preferably fixed by means of adhesives.

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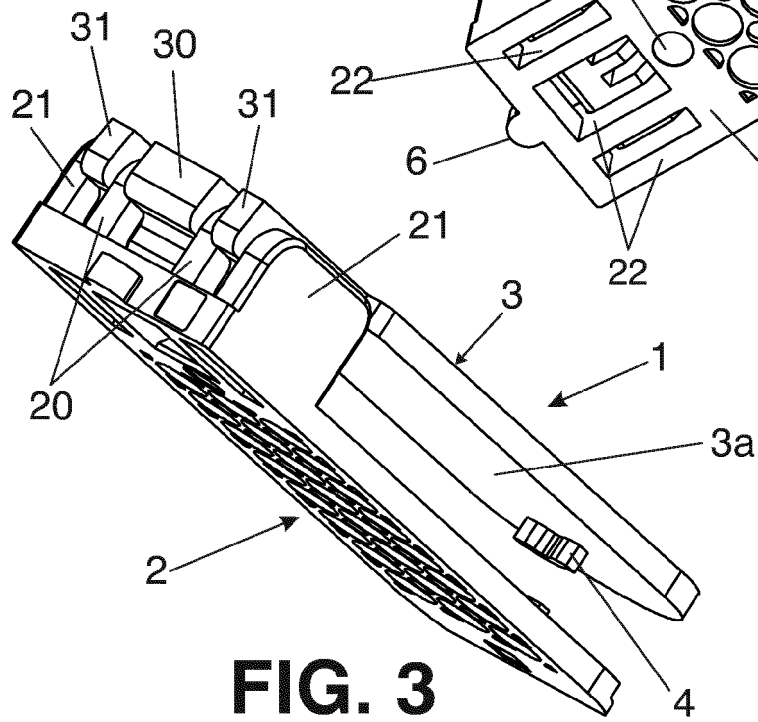
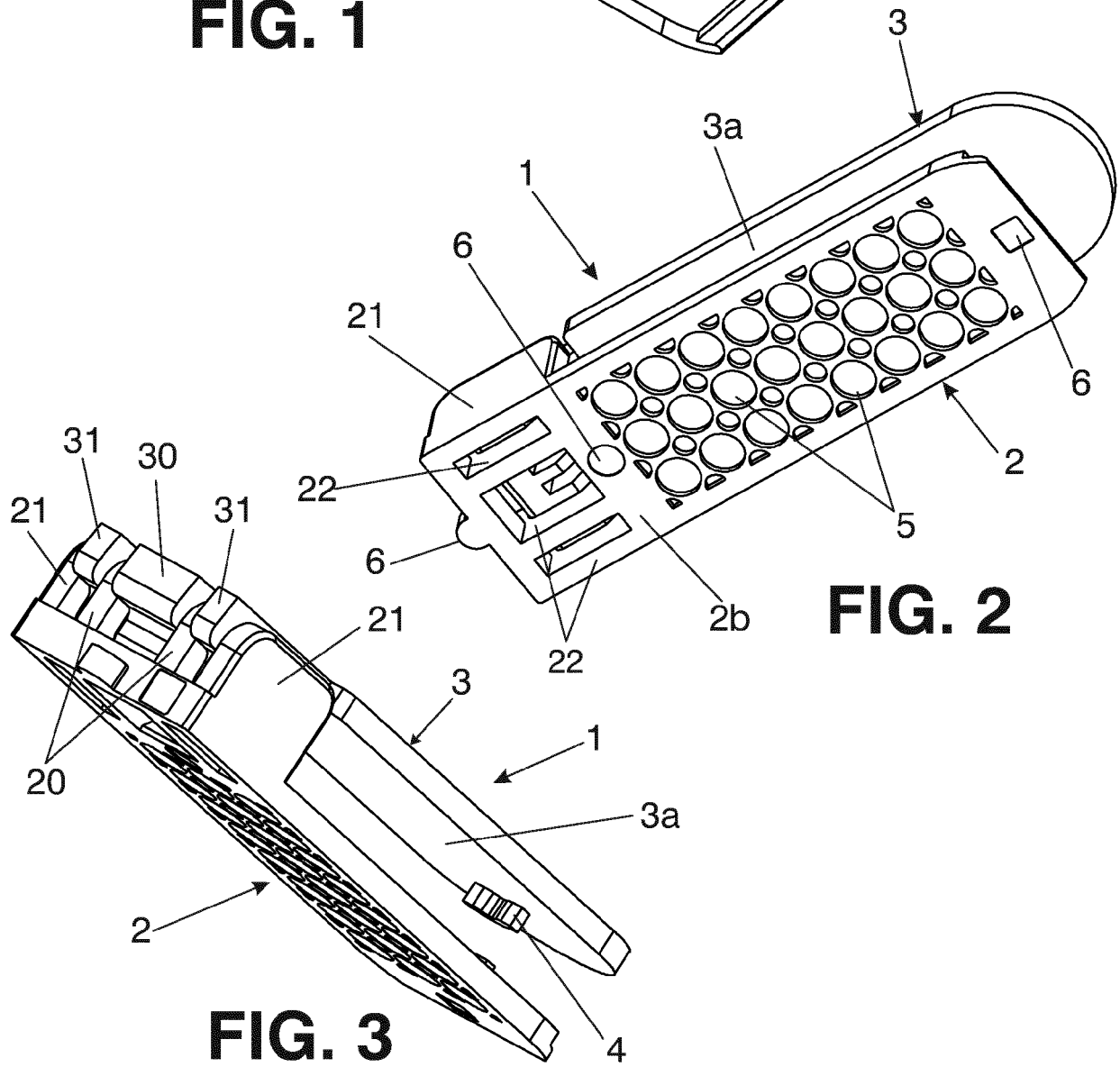
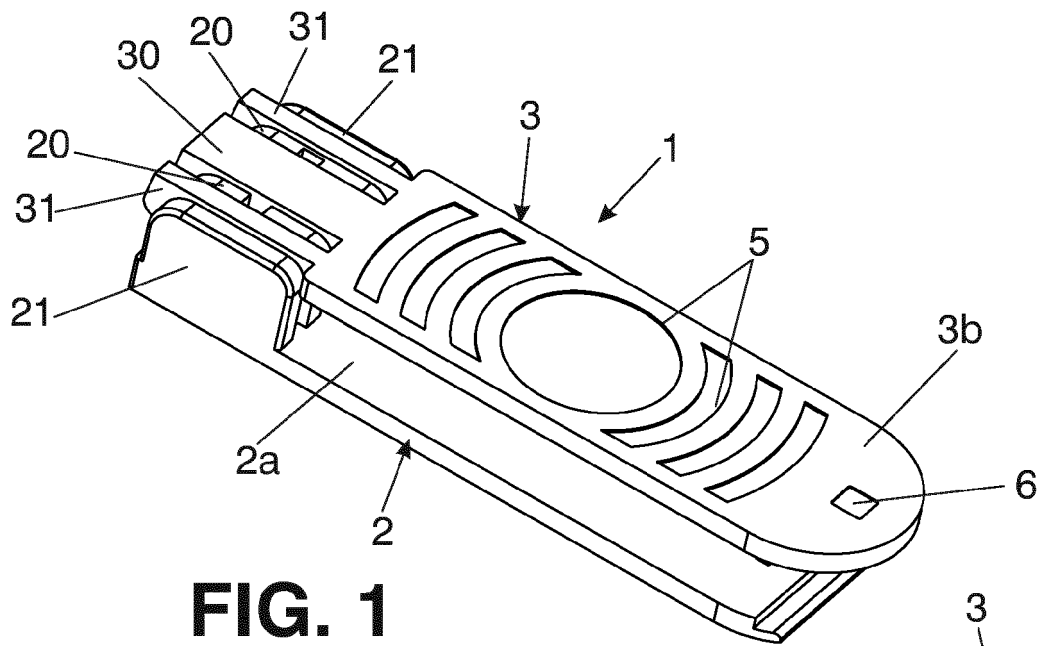
7. The clamp for a character die applicable to manufacturing license plates, signs or the like by stamping according to claim 6, **characterised in that** the existence of fitting elements (4), arranged in matching positions on both inner surfaces (2a and 3a) of both portions (2, 3) of the clamp, at both ends thereof, is contemplated for positioning the male and female parts of the die.

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8. The clamp for a character die applicable to manufacturing license plates, signs or the like by stamping

according to claim 7, **characterised in that** the fitting elements (4) have different shapes and sizes to be adjusted to different models of male and female parts of the die.



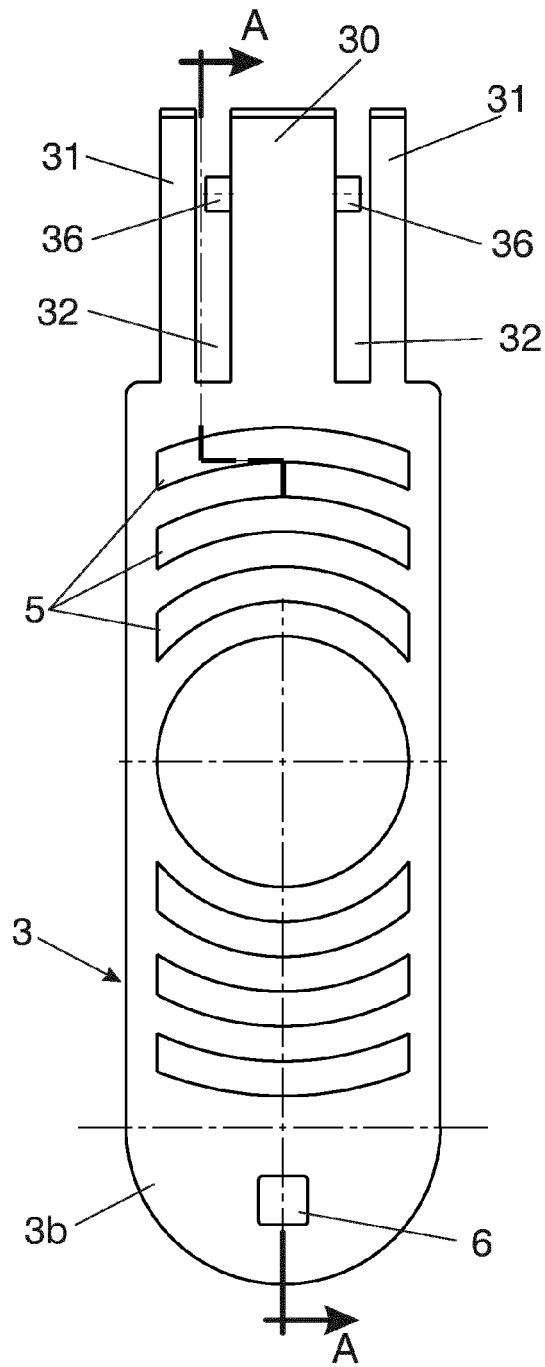


FIG. 4

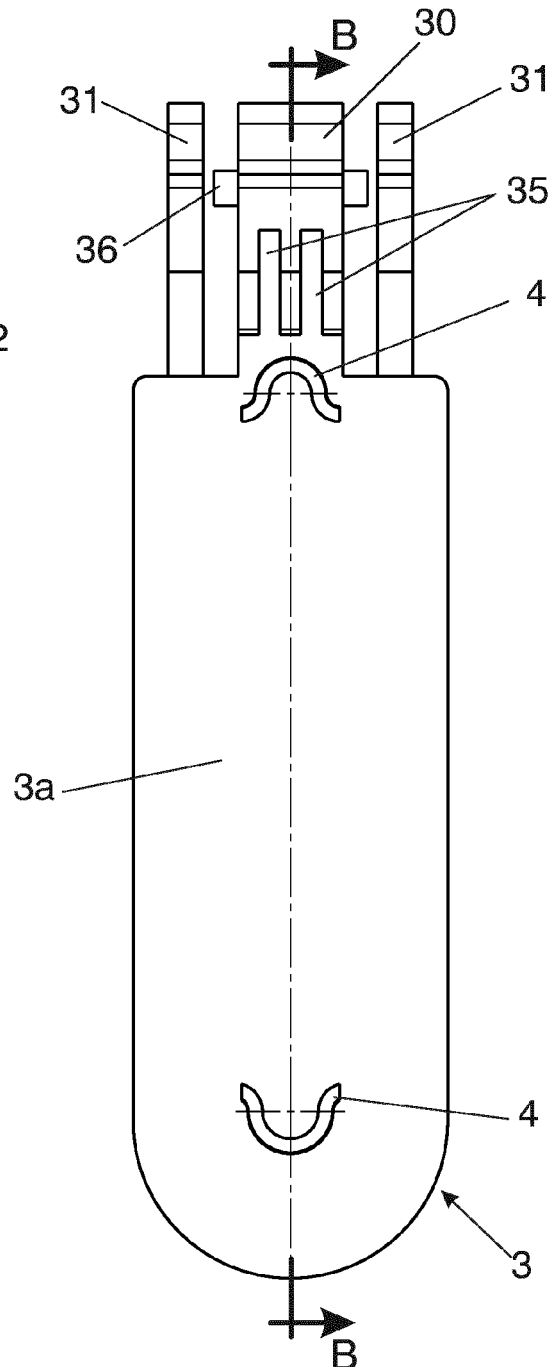


FIG. 5

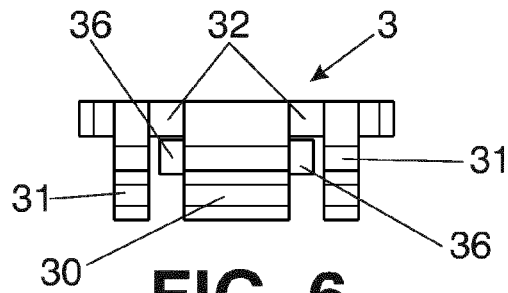


FIG. 6

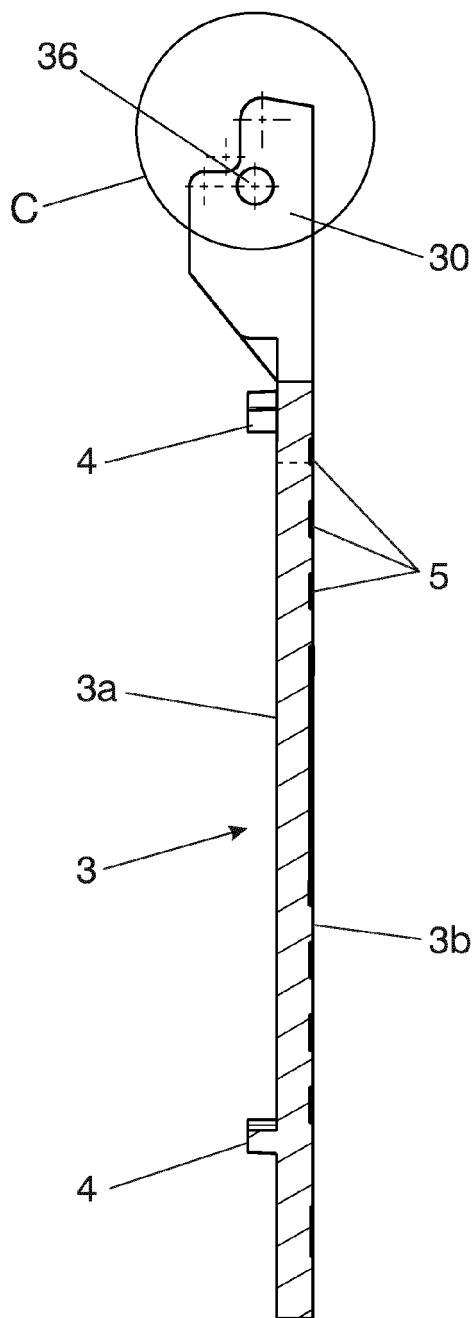


FIG. 7
A-A

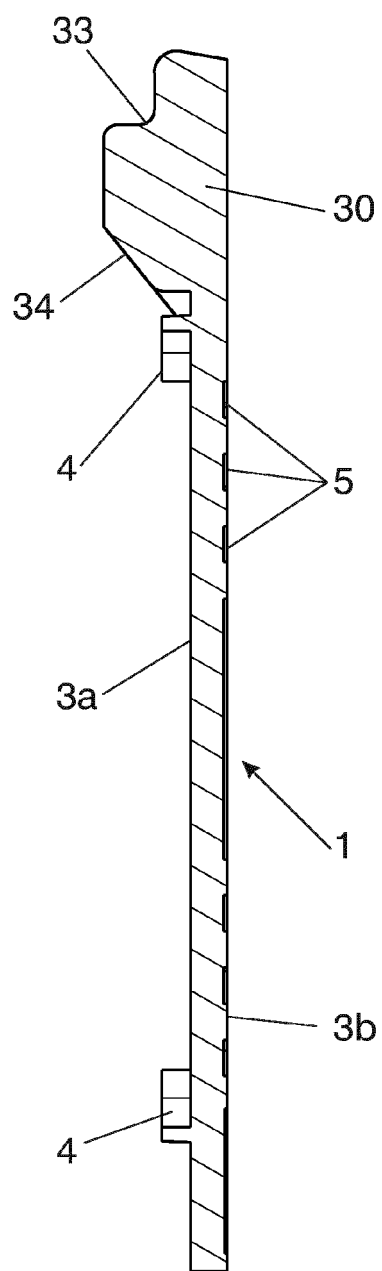


FIG. 8
B-B

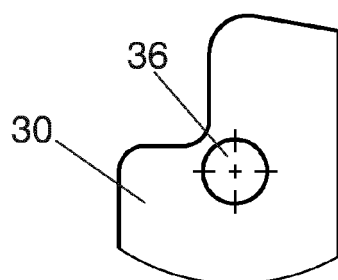


FIG. 9
C

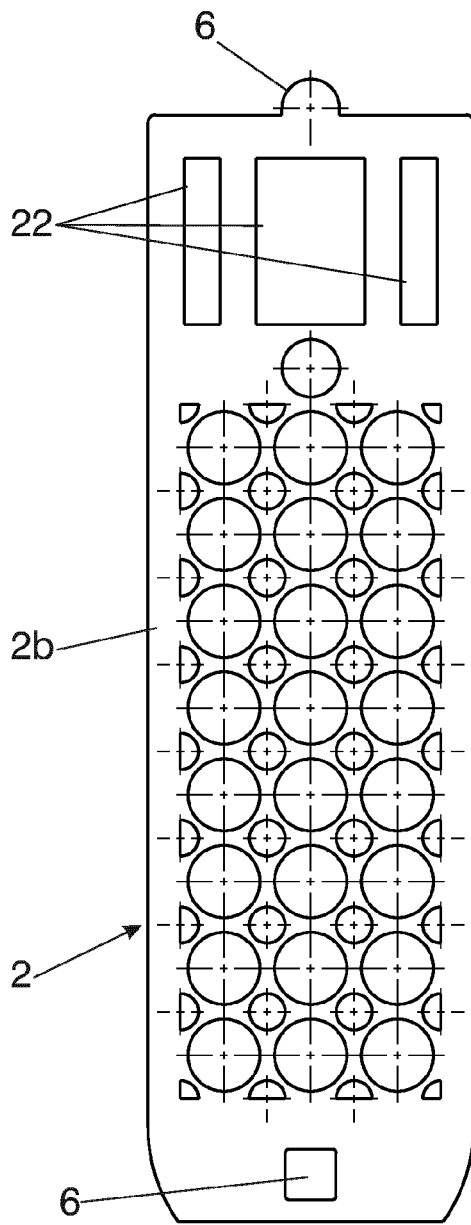


FIG. 10

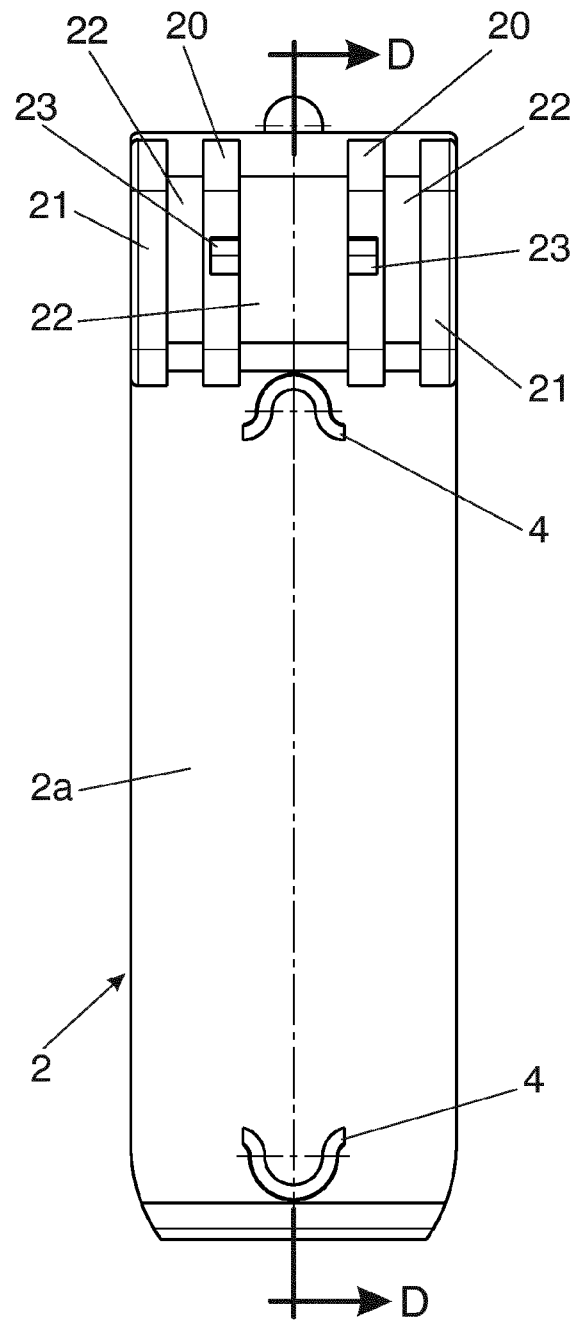


FIG. 11

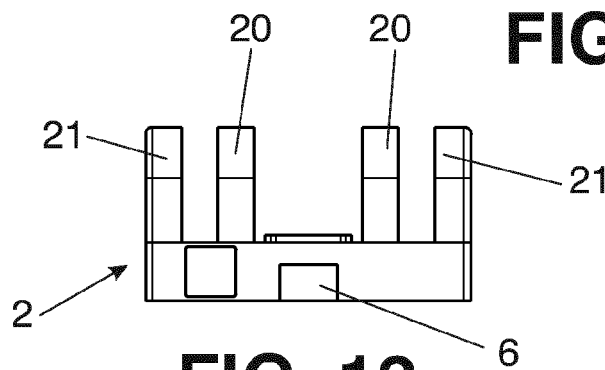


FIG. 12

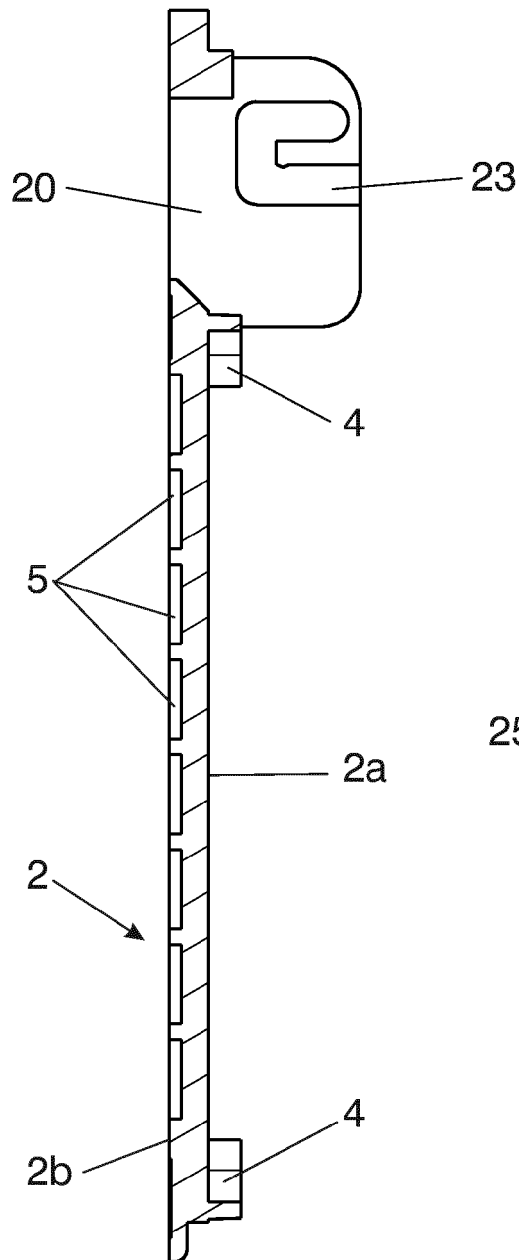


FIG. 13

D-D

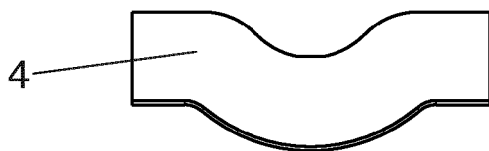


FIG. 15

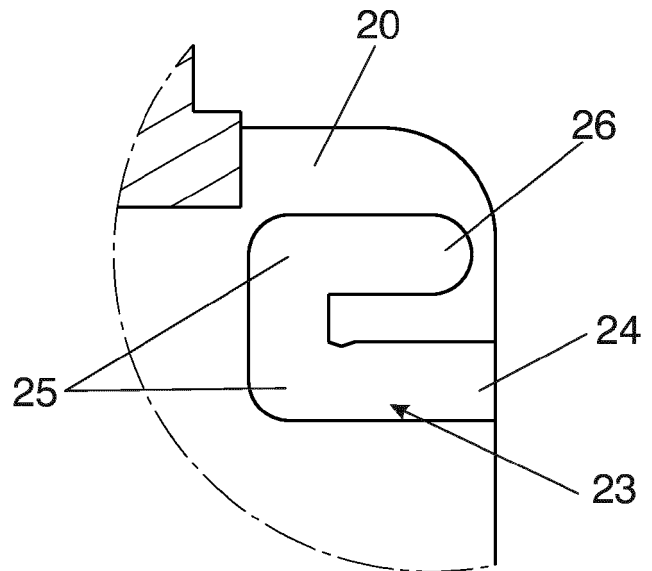


FIG. 14

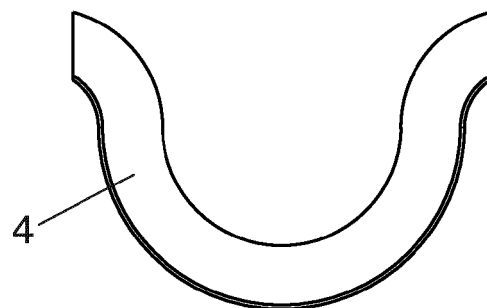


FIG. 16



EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2022

DOCUMENTS CONSIDERED TO BE RELEVANT			
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			B44B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 June 2012	Examiner Urbaniec, Tomasz
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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EP 12 38 2022

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14-06-2012

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