



(11) **EP 1 584 488 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
13.01.2010 Bulletin 2010/02

(51) Int Cl.:
B42F 1/02 (2006.01)

(21) Application number: **05251537.6**

(22) Date of filing: **15.03.2005**

(54) **Clip**

Befestigungsklammer

Agrafe d'attachement

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR**

(30) Priority: **06.04.2004 GB 0407824**
29.09.2004 US 953882

(43) Date of publication of application:
12.10.2005 Bulletin 2005/41

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US-A- 4 384 417

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Description

Background Art

[0001] The present invention relates to a clip and in particular, stationery clips to be used with paper, card or the like.

[0002] Various different clips are well known for holding together a plurality of sheets of paper. Examples include a bull dog clip and the well known basic or common wire paper clip.

[0003] Clips have also been proposed for marking a particular page or a particular part of a page. For example, clips in the shape of an arrow can be used to indicate where a signature is needed. Clips are also known which have a tab portion which protrudes beyond the edge of a page or divider to which the clip has been attached. This allows a particular page or section to be easily referenced. The tab is, however, made of plastic and is only possible to be marked with a suitable water proof marker. This is inconvenient for the user if they do not have the required marker to hand.

[0004] It has also been proposed to provide clips with advertising across one of the clipping parts (W002/28217).

[0005] Despite these items, there still remains a need for new clips that can be used, for example, to mark pages or to attach information to a sheet.

[0006] US4384417A shows a clip according to the preamble of claim 1.

Summary of the Invention

[0007] The present invention now provides a clip according to claims 1-11 and a method according to claim 12.

Brief Description of the Drawing Figures

[0008] Other aspects, purposes and advantages of the invention will become clear after reading the following detailed description with reference to the accompanying drawings, in which:

Figure 4 shows an unclaimed proposal;
 Figures 10a and 10b show an embodiment of the present invention where a thermal bond is provided between rubber material on which an image can be marked and the plastics material forming a tab part in addition with a form locking connection;
 Figures 11 a and 11b show another embodiment similar to that of Figure 10, but without the form locking connection;
 Figure 12 shows schematically a method for manufacturing a clip embodying the present invention;
 Figure 13 shows a clip embodying the present invention with a flipping tab; and
 Figure 14 shows a clip embodying the present in-

vention with a hanging hole.

Detailed Description of the Preferred Embodiments

[0009] In the described embodiments of the present invention, the clip is arranged to be attached to one or more sheets of paper, card, a folder, a diary, a book or the like.

[0010] Figure 4 shows an unclaimed proposal of a clip 100. The clip has a wire part 102. The clip also has a tab portion 104. In the proposal shown in Figure 4, the wire part 102 comprises a first inner V portion 106 and a second outer V portion 108. The two V portions are connected together by a portion 110 of the clip which adopts an ovoid type configuration as shown in dotted lines in Figure 4. In an implementation, the tab 104 comprises a two piece plastic member which is hinged along end on side opposite the wire part 102. The wire part 102 and in particular portion 110 is inserted between the two sides of the tab 104 and the two sides of the tab portion are closed. Any suitable mechanism can be used for holding the two parts of the tab together such as a push fit, a snap fit, locking members, adhesive or the like.

[0011] The wire part 102 is preferably made of wire, resilient plastic or the like. The tab 104 is preferable made out of a plastics material. The tab portion may be written on by a suitable marking pen or may have material applied thereto which allows the user to write thereon. Examples of such a material include certain types of plastic and paper layers.

[0012] In one modification to the arrangement shown in Figure 4, the clip may have the same general configuration but may be molded in a single piece out of one material. In another modification, the tab part 104 may be molded on to the clipping part 102.

[0013] When the sheets of material or the like are clipped between the two Vs 106 and 108, tab portion 104 will project from the top of the sheet of material and can thus act as an index or marking part. The tab portion may have any other suitable shape and for example may be circular, oval, triangular, flower shaped, arrow shaped, exclamation mark shaped, question mark shaped, star shaped or the like. The tab portion may be opaque or transparent. The tab portion may have a planar surface or alternatively the tab portion may have a curved surface.

[0014] It should be understood that the shape of the clipping part in the tab portion can have any suitable shape. For example, the clip may be an inverted u-shape, a square shape, an inverted v-shape, a rectangular shape, a triangular shape or the like.

[0015] Reference is now made to Figures 10a and 10b which illustrate an embodiment in which a thermal bond is formed between the plastic material and the rubber material. Additionally, there is also a locking structure formed which holds together the rubber and plastics material. The plastics material can be from any suitable material such as for example PP (polypropylene) or any type

of PS (polystyrene, high impact polystyrene) or ABS (Acrylonitrile Butadiene Styrene). The rubber material can be any suitable material such as TPR (thermoplastic plastic rubber) or any kind of TPE (thermoplastic elastomer) such as for example SBS (styrene butadiene styrene).

[0016] The clip 450 shown in Figure 10a has a structure similar to that illustrated in Figure 4. The clipping part 452 has a similar shape to that illustrated in relation to Figure 4 and will not be described in any further detail. It should be appreciated that the clipping part 452 may be made out of wire, any suitable plastics material or the like. The clipping part 452 is attached to a tab portion 454. The tab part 454 comprises a suitable plastics material, such as discussed above, having an indented portion 458 in which a suitable rubber portion is received. This can be seen from Figure 10b which illustrates the clip of Figure 10a in cross section. As can be seen, the tab part 454 comprises the first part 456 made of plastics material. This is shaped so as to have an indented portion 460 into which the rubber layer 458 is received. Additionally, there is a through hole 462 which runs through the plastics part 456 to the rear thereof. This through hole 462 is filled with rubber. In particular, during the molding process of the clip, which will be described in more detail later, the rubber is fed in from the rear 464 of the hole 462. The rubber fills up the insert 460 on the front of the tab, fills up the opening 462 and additionally provides a small portion 466 which extends across the opening. The small portion 466 effectively forms a T with the rubber in the opening 462. In this way, the rubber not only can thermally bond to the plastics material but is also physically held in place.

[0017] Also shown in Figure 10b and referenced by numeral 465 is a part of raised writing or a logo or the like formed on the back surface of the clip. This is optional. The writing or logo or the like is formed of the same material as part 456 of the clip. In preferred embodiments of the invention, where the raised writing, logo or the like is provided, the surface of the writing or the like is coplanar with the surface of the rubber portion 466. Cross-section area 468 is part of the clipping part 452 retained in the tab. Also shown in Figure 10b is the cross section 470 through one of the wire arms of the clipping part 452. Cross sectional area 472 represents a vertical part of the clipping part which is partly received in the tab portion and partly external thereto.

[0018] The embodiment shown in Figures 10a and 10b has the advantage that the additional locking provided by the rubber itself means that the thermal bond between the rubber material and the plastics material does not need to be particularly strong. This means that the most appropriate selection of materials can be made without requiring a good thermal bond to be achievable.

[0019] Figures 11a and 11b show a modification to the embodiment of Figure 10a and 10b. In this embodiment, the rubber material and plastic material are only held together with a thermal bond. In other words, the physical

holding together of the plastic and rubber material is omitted. In order to achieve a proper connection between the rubber material and the plastics material, the compatibility of these materials is more important. In particular, the chemical structures of the thermoplastic and the rubber material need to be compatible, for example, similar. Combinations which have been found to be useful comprise TPE, which is based on PP and PP, or SBS (styrene-butadiene-styrene elastomer) and PS. However, it should be appreciated that this is by way of example only and any suitable plastics material which is compatible with a corresponding rubber material can be used together.

[0020] Those parts which are similar or the same as shown in Figure 10 are marked with the same reference number. The main difference between the embodiment of Figure 10 and Figure 11 is that the rubber is introduced via the feed point 486 into the opening 462. This causes the rubber writeable area 458 to be formed. However, no rubber extends beyond the opening formed in the plastics material 456 on the back of the tab portion. In other words, the rubber in the opening is flush with the plastics surface. Thus, the arrangement of Figure 11 relies solely on the thermal bond between the rubber and plastics material to form the connection. In addition, the through hole 462 is positioned in a different place than that of the embodiment shown in Figure 10. In Figure 10, the through hole 462 is positioned around a central region of the writeable material 458. In the embodiment shown in Figure 11, the through hole 462 is provided in the vicinity of an edge region of the writeable material 458. However, it should be appreciated that this is a matter of design choice. Where the form locking connection is also being formed, it generally is desirable to have the through hole formed in a central region thereof. However, where there is no form locking connection, the hole can be positioned as required. It should also be appreciated that the cross section shown in Figure 11b is taken at a slightly different position and accordingly, the cross section through part of the clip 472 is not shown.

[0021] Figure 12 schematically shows the molding process for forming clips embodying the present invention according to Figure 11. Firstly, in step S1, a bottom part of the mold is taken and the clipping part is placed partly in the bottom part of the mold. The mold is used to form the tab part. Next in step S2, the top part of the mold is fitted to the bottom part of the mold. This is to provide the plastics part of the tab. The plastic material is injected into the mold and this will form the plastic part of the tab as for example shown in the cross sections of Figures 11a and 11b. The wire clipping part will then be joined to the plastics part. Next in step S3, the top of the mold used to form the plastic tag is removed and it is placed with a second different top part of the mold. This is to allow the rubber part of the tab to be formed. The rubber material is injected into the mold and forms the rubber areas shown in Figure 10 or 11. In step S4, the top part of the mold is removed and then in step S5, the

bottom part of the mold is removed to provide the clip. Vertical injection molding is used in preferred embodiments of the invention.

[0022] In embodiments of the present invention, the tab part can take any suitable form.

[0023] It should be appreciated that the method described in relation to Figure 12 can be modified to produce the clip shown for example in Figure 10. To achieve this, the bottom mold would need be provided with removable sliders. The first slider part, when attached to the bottom of the bottom mold would enable the plastics parts to be formed including the writhing, logo or the like. This would be in place until step S3 at which point the slider would be removed and replaced with another slider. This would enable the rubber portion 466 to be formed. The removable sliders can be inserted and removed using any suitable action such as by sliding or by clipping into position or by any suitable technique.

[0024] Figure 13 shows a first modification to the tab part. In particular, when the clip is attached to a sheet of paper and the papers are in a pile, a curved part or a tab (flipping portion) 504 projects out further than the rest of the tab portion 500. The protruding portion can of course take other suitable shapes. This facilitates flipping, i.e. wherein the user going through piles of paper which are separated into different bundles held together by different clips. Because the area 504 protrudes beyond the end of the tab portion 500 this makes it much easier to flip through piles of documents. It is also intuitive to use. It should be appreciated that in the embodiment shown in Figure 13, the clipping part is generally hexagonal in shape as apposed to the triangular shapes illustrated in the other embodiments. It should be appreciated that the different shaped clipping parts of the other embodiments can be used alternatively in the embodiment shown in Figure 13. The embodiment shown in Figure 13 is of the same basic structure as that illustrated in relation to Figures 10a to 10b or Figures 11a to 11b, that is has a plastic tab portion on to which rubber material is provided.

[0025] Figure 14 shows a further embodiment of the present invention where the tab part 512 has a curved upper edge 516. The tab portion also has a through hole 514. This hole allows users to attach a push pin or other device to attach one or more documents to a bulletin board, cube wall or other surface that can be used for such purpose. Thus, users can attach several groups of documents in one location and use clips to quickly identify documents, thus saving wall space. The clipping portion 510 is similar to that shown in Figure 13 and again can take any suitable shape. The provision of a through hole can be provided in any shape of tag, and not just as shown in Figure 14. The hole is preferably located in the central region of the clip but in some embodiments of the present invention may be positioned for example at one end region of the tab portion. The hole can be circular or any other suitable shape.

[0026] In one embodiment of the present invention, the plastic material may be blue or any other suitable color

and the write and erase rubber material already discussed, may be white.

[0027] The triangular clipping part used in some embodiments has the advantage of increasing gripping ability without creasing or damaging plastic. However, the clipping part can take any suitable form.

[0028] The present invention has described the presence of a tab portion on which the user is able to write. It should be appreciated that in some embodiments of the present invention, clips with pre-printed portions may be provided on the clips. The pre-printed words can be any suitable words such as for example "sign here"; "section 1 "; "part 1 "; "index"; "read"; "news"; "project" or the like.

[0029] It should be appreciated that embodiments of the present invention can be provided in any suitable shape. Any aspects of any embodiment can be combined with any aspect of any other embodiment.

Claims

1. A clip (450) comprising: a clipping part (452) for clipping to an object; and a tab part (454) arranged to extend from the clipping part, with the tab part comprising a first plastics material and a second material that is markable by ink from a pen **characterised in that** said second material is injection molded rubber.
2. The clip of claim 1, wherein the plastics material comprises at least one of polypropylene or polystyrene.
3. The clip of claim 1, wherein the rubber material comprises a thermoplastic rubber or thermoplastic elastomer.
4. The clip of claim 1, wherein the plastics material and rubber material are configured to have a form locking connection therebetween.
5. The clip of claim 4, wherein the form locking connection is provided by the rubber material extending through the plastics material and having a region at either end of the rubber material to engage the plastics material.
6. The clip of claim 1, wherein the rubber material has a Shore Hardness of between 55 to 95.
7. The clip of claim 1, wherein the rubber material has a Shore Hardness of between 70 and 90.
8. The clip of claim 1, wherein the clipping part is partially received in the tab part.
9. The clip of claim 1, wherein a raised portion is provided on a side of the tab part opposite to that which has the rubber material.

10. The clip of claim 9, wherein the raised portion comprises at least one of writing, a logo, a design or a picture.
11. The clip of claims 9, wherein the plastics material and the rubber material have a form locking connection therebetween and the form locking connection is arranged to be coplanar with a surface of the raised portion.
12. A method of making a clip including a clipping part (452) for clipping an object and a tab part (454) arranged to extend from the clipping part, with the tab part comprising a material markable with a pen, the method comprising: inserting a clipping part into a first part of a mold; closing the mold with a second part; injecting a plastics material; removing one part of the mold and replacing it with a third mold part; introducing a rubber material into the mold to thereby produce the material markable with ink from a pen; and removing the clip from the mold.

Patentansprüche

1. Befestigungsklammer (450) mit einer Klemmpartie (452) zum Anklemmen an einen Gegenstand und mit einer sich von der Klemmpartie aus erstreckenden Schildpartie (454), wobei die Schildpartie ein erstes Kunststoffmaterial und ein mittels Farbe eines Stifts beschriftbares zweites Material aufweist, **dadurch gekennzeichnet, dass** das zweite Material spritzgegossener Gummi ist.
2. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** das Kunststoffmaterial zumindest Polypropylen oder Polystyrol aufweist.
3. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** das Gummimaterial thermoplastischen Gummi oder ein thermoplastisches Elastomer aufweist.
4. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** das Kunststoffmaterial und das Gummimaterial formschlüssig miteinander verbunden sind.
5. Befestigungsklammer nach Anspruch 4, **dadurch gekennzeichnet, dass** die formschlüssige Verbindung dadurch gebildet wird, dass sich das Gummimaterial durch das Kunststoffmaterial hindurch erstreckt und jeweils einen Bereich an seinen beiden Enden aufweist, der mit dem Kunststoffmaterial in Berührung steht.
6. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** das Gummimaterial eine

Shore-Härte zwischen 55 und 95 aufweist.

7. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** das Gummimaterial eine Shore-Härte zwischen 70 und 90 aufweist.
8. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** die Klemmpartie teilweise in der Schildpartie aufgenommen ist.
9. Befestigungsklammer nach Anspruch 1, **dadurch gekennzeichnet, dass** die Schildpartie eine erhöhte Partie auf einer der mit dem Gummimaterial versehenen Seite abgewandten Seite aufweist.
10. Befestigungsklammer nach Anspruch 9, **dadurch gekennzeichnet, dass** die erhöhte Partie mindestens eine Beschriftung, ein Logo, eine Formgestaltung oder ein Bild aufweist.
11. Befestigungsklammer nach Anspruch 9, **dadurch gekennzeichnet, dass** das Kunststoffmaterial und das Gummimaterial eine formschlüssige Verbindung miteinander aufweisen und dass die formschlüssige Verbindung und eine Oberfläche der erhöhten Partie in einer Ebene angeordnet sind.
12. Verfahren zum Herstellen einer Befestigungsklammer, die eine Klemmpartie (452) zum Anklemmen an einen Gegenstand und eine sich von der Klemmpartie erstreckende Schildpartie (454) aufweist, wobei die Schildpartie ein mittels eines Stifts beschriftbares Material aufweist, mit den Verfahrensschritten: Einsetzen einer Klemmpartie in ein erstes Teil einer Gussform; Verschließen der Gussform mittels eines zweiten Teils; Einspritzen eines Kunststoffmaterials; Entfernen eines Teils der Gussform und Ersetzen dieses Teils durch ein drittes Teil der Gussform; Einbringen eines Gummimaterials in die Gussform, um das mittels Farbe eines Stifts beschriftbare Material herzustellen; und Entfernen der Befestigungsklammer aus der Gussform.

Revendications

1. Attache (450) comprenant : une partie de fixation (452) pour la fixation sur un objet ; et une partie formant onglet (454) disposée de manière à s'étendre à partir de la partie de fixation, la partie formant onglet comprenant un premier matériau plastique et un second matériau qui est inscriptible à l'encre par un stylo, **caractérisée en ce que** ledit second matériau est du caoutchouc moulé par injection.
2. Attache selon la revendication 1, **caractérisée en ce que** le matériau plastique comprend au moins du polypropylène ou du polystyrène.

3. Attache selon la revendication 1, **caractérisée en ce que** le matériau caoutchouteux comprend un caoutchouc thermoplastique ou un élastomère thermoplastique. 5 et retirer l'attache du moule.
4. Attache selon la revendication 1, **caractérisée en ce que** le matériau plastique et le matériau caoutchouteux sont conçus de manière à être mutuellement reliés par engagement positif. 10
5. Attache selon la revendication 4, **caractérisée en ce que** la liaison par engagement positif est créée par le matériau caoutchouteux s'étendant à travers le matériau plastique et possédant à chacune des extrémités du matériau caoutchouteux une région pour engager le matériau plastique. 15
6. Attache selon la revendication 1, **caractérisée en ce que** le matériau caoutchouteux possède une dureté Shore comprise entre 55 et 95. 20
7. Attache selon la revendication 1, **caractérisée en ce que** le matériau caoutchouteux possède une dureté Shore comprise entre 70 et 90. 25
8. Attache selon la revendication 1, **caractérisée en ce que** la partie de fixation est partiellement reçue dans la partie formant onglet.
9. Attache selon la revendication 1, **caractérisée en ce qu'une** partie surélevée est prévue sur un côté de la partie formant onglet, à l'opposé de celui qui présente le matériau caoutchouteux. 30
10. Attache selon la revendication 9, **caractérisée en ce que** la partie surélevée comprend au moins une légende, un logo, un dessin ou une image. 35
11. Attache selon la revendication 9, **caractérisée en ce que** le matériau plastique et le matériau caoutchouteux possèdent une liaison mutuelle par engagement positif, et la liaison par engagement positif est disposée de manière à être coplanaire avec une surface de la partie surélevée. 40 45
12. Procédé de fabrication d'une attache comprenant une partie de fixation (452) pour la fixation sur un objet et une partie formant onglet (454) disposée de manière à s'étendre à partir de la partie de fixation, la partie formant onglet comprenant un matériau inscriptible par un stylo, le procédé comprenant les étapes consistant à : insérer une partie de fixation dans une première partie d'un moule ; fermer le moule avec une deuxième partie ; injecter un matériau plastique ; retirer une partie du moule et la remplacer par une troisième partie de moule ; introduire un matériau caoutchouteux dans le moule, pour produire ainsi le matériau inscriptible à l'encre par un stylo ; 50 55

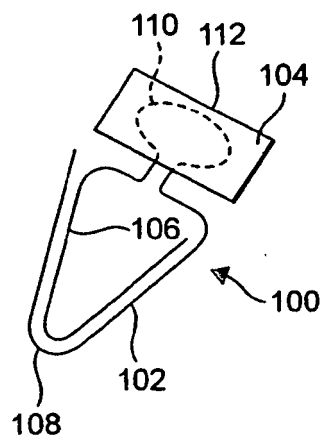


FIG. 4

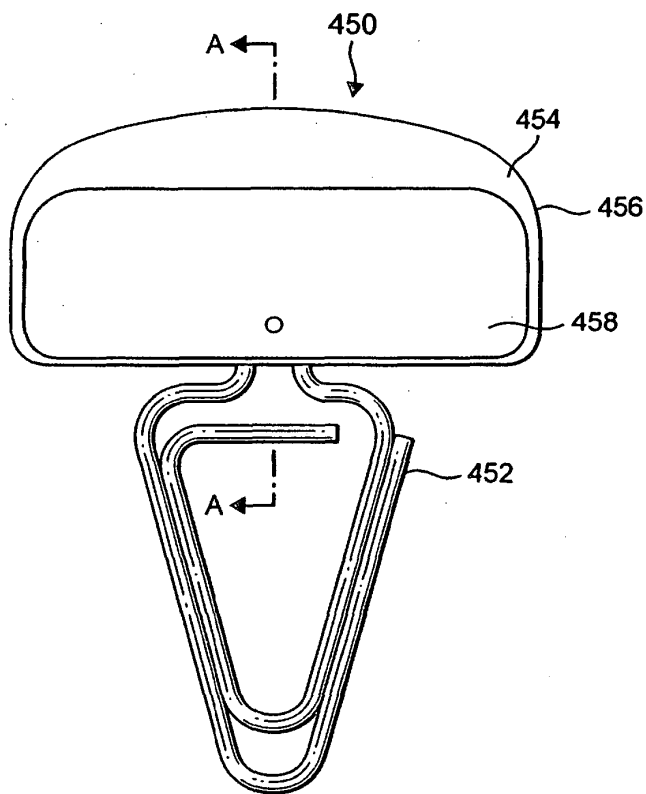


FIG. 10A

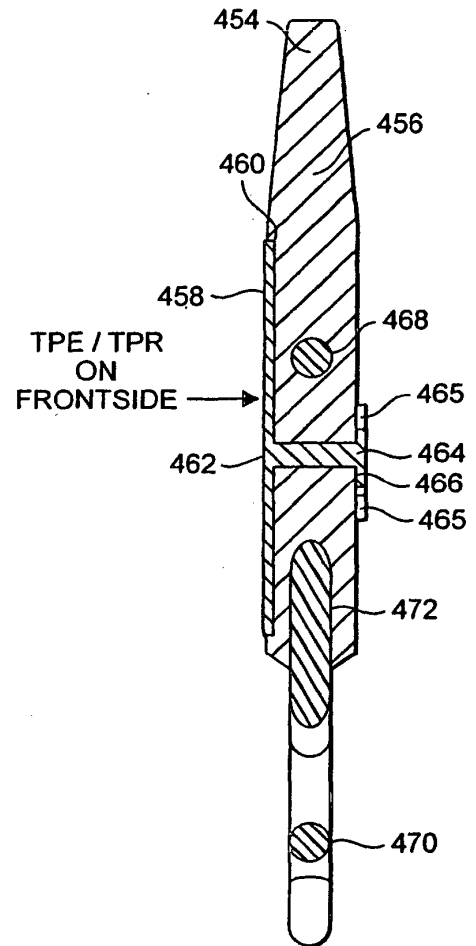


FIG. 10B

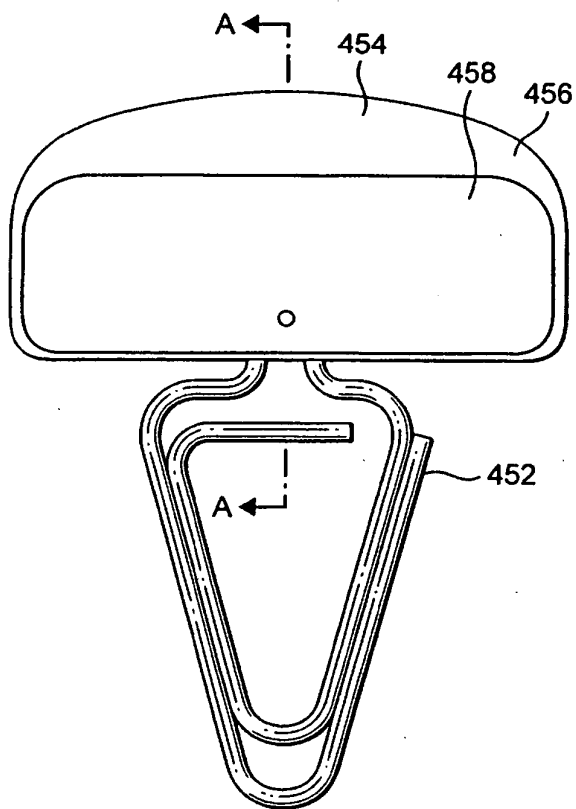


FIG. 11A

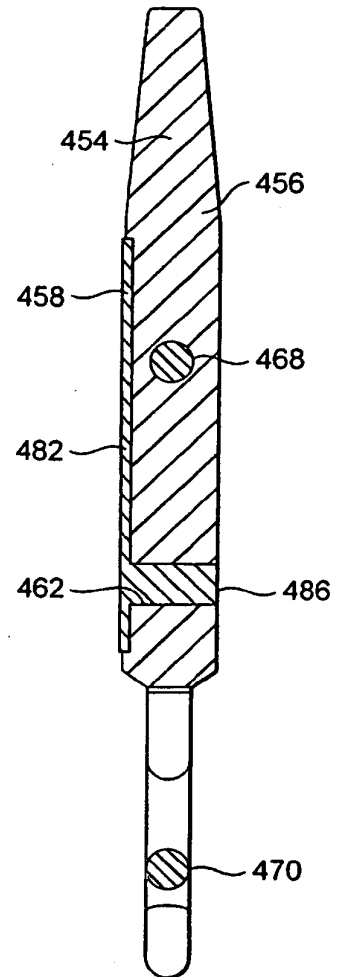


FIG. 11B

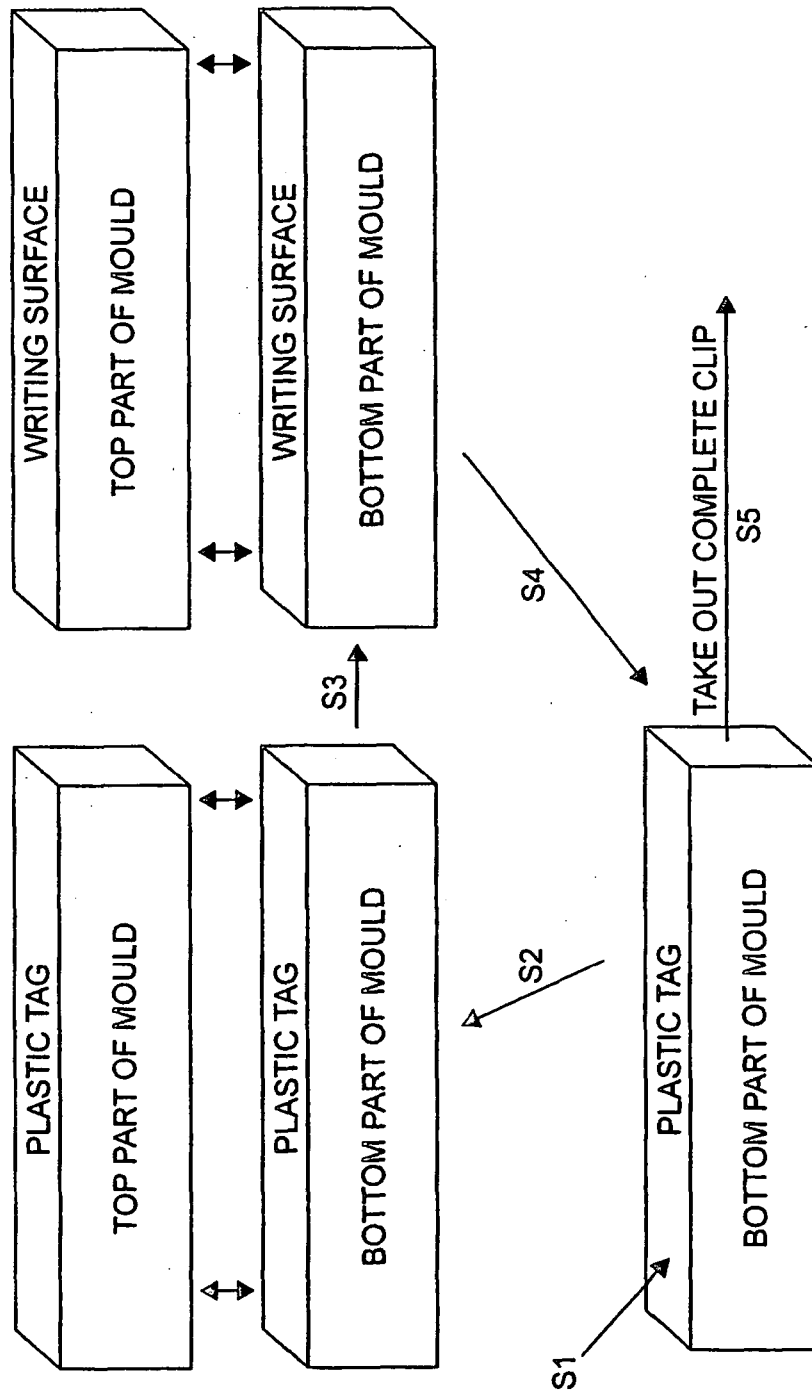


FIG. 12

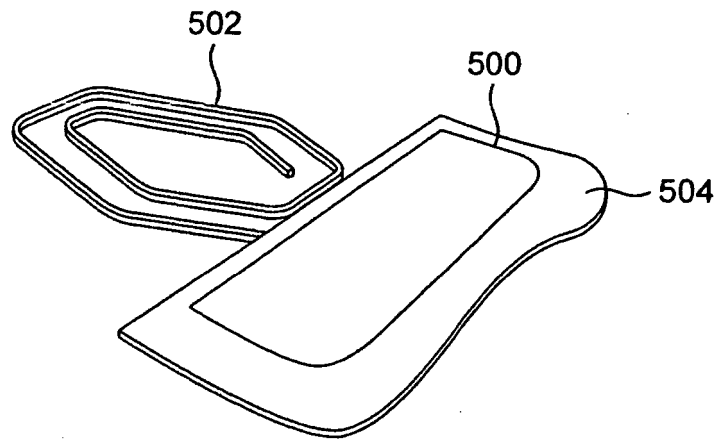


FIG. 13

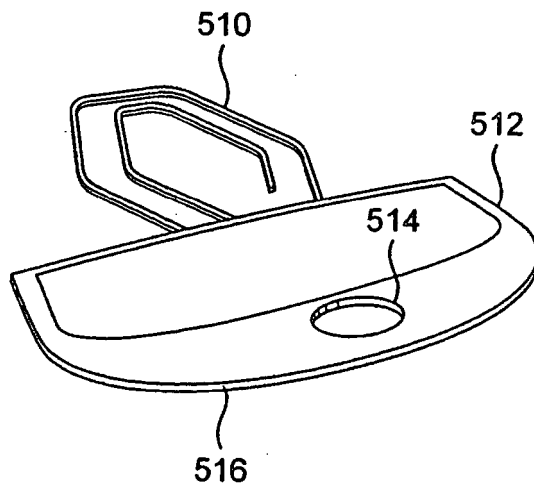


FIG. 14

REFERENCES CITED IN THE DESCRIPTION

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