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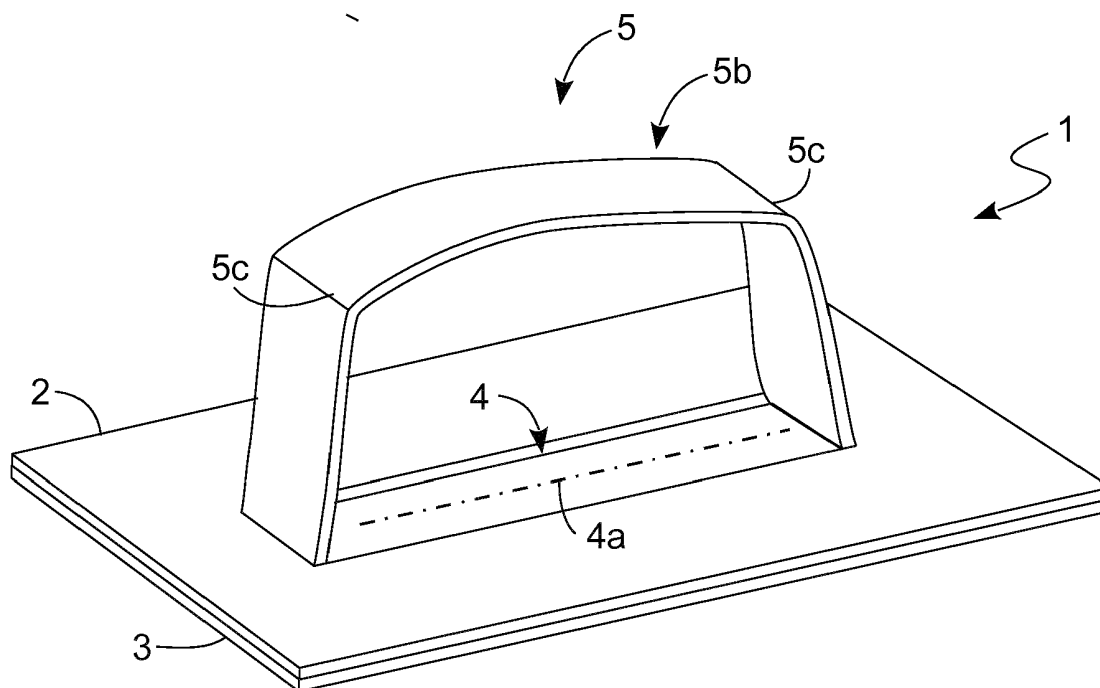
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(54) **IMPROVED HANDLE FOR BOXES AND THE LIKE**

(57) A handle (1) for a box is provided for comprising two sheets (2, 3) of paper material overlapping and integrally bound to each other; an opening (4) made on one of the sheets (2, 3); a handle (5) in fabric, positioned between the sheets (2, 3) and defining two ends (5a)

opposite to each other and a grip portion (5b) between the ends (5a); said ends (5a) are integrally bound between the sheets (2, 3) placing the grip portion (5b) over the opening (4).

Fig. 1



Description

[0001] The present invention relates to an improved handle for boxes and the like as recited in the preamble of the first claim.

[0002] Currently, boxes are provided with retractable handles, i.e. handles which protrude from the box during use facilitating the gripping thereof and which, when the box is not in use, can be folded limiting the overall dimensions of the box.

[0003] Said handles consist of a strip of paper material enclosed between two sheets so as to partially overlap in a special slit made on one of the two sheets.

[0004] At the moment of use, the user grasps the strip, pulls it out from the slit and folds it so as to define a handle of the box.

[0005] The known technique cited above has some significant drawbacks.

[0006] A first significant drawback is represented by the fact that the handle is particularly inconvenient to use.

[0007] In fact when the handle is almost completely housed in the slot made on the box, the user encounters considerable difficulty in extracting and distending it due to the rigidity of the material constituting said handle.

[0008] Another drawback is identifiable in that the handle is particularly uncomfortable especially if lifting heavy loads. A further drawback is the fact that the handles are not sufficiently resistant, and consequently tend to break frequently.

[0009] In this situation the technical purpose of the present invention is to devise an improved handle for boxes and the like able to substantially overcome the drawbacks mentioned above.

[0010] Within the sphere of said technical purpose one important aim of the invention is to have a particularly practical handle, simple to use and which thus ensures a convenient and comfortable grip.

[0011] Another important aim of the invention is to provide a resistant handle for boxes. The technical purpose and specified aims are achieved by an improved handle for boxes as claimed in the appended Claim 1. Preferred embodiments are evident from the dependent claims.

[0012] The characteristics and advantages of the invention are clearly evident from the following detailed description of a preferred embodiment thereof, with reference to the accompanying drawings, in which:

Fig. 1 shows the handle for a box according to the invention;

Fig. 2 shows the handle in a different configuration;

Fig. 3 shows an exploded view of the handle according to the invention; and

Fig. 4 shows the production method of the handle.

[0013] With reference to said drawings, reference numeral 1 globally denotes the handle for a box.

[0014] It is suitable to be associated to a box or other packaging or similar container as to facilitate the opera-

tions of lifting and moving the box.

[0015] The handle 1 comprises a first sheet 2 and a second sheet 3 superposed and firmly attached to the first sheet 2; at least one opening 4 made on one of the sheets 2 and 3 and defining a preferred extension axis 4a; a handle 5 constrained between the sheets 2 and 3 so as to at least partially position itself over the opening 4. Preferably, the handle 1 has a single opening 4 made on the first sheet 2. The sheets 2 and 3 are made of paper material and, preferably, of highly resistant paper material, more preferably, of kraft paper and, more preferably, of pure cellulose kraft paper.

[0016] The handle 5 comprises two ends 5a opposite each other and constrained between the sheets 2 and 3 and a grip portion 5b of the handle 1 enclosed between said ends 5a. In detail, the handle 5, as described in detail below, has only the ends 5a integrally constrained to the sheets 2 and 3, while the grip portion 5b is movable relative to the sheets 2 and 3 so as to protrude almost entirely from them through the opening 4, or alternatively, be at least partially housed therein.

[0017] The handle 5 is made of fabric and, in particular, in a fabric made with a yarn appropriately selected from cotton, polyester, polypropylene, rayon or hemp. More appropriately, it is cotton.

[0018] The handle 5 and, in particular, the grip portion 5b are suitable to define a configuration of use (Fig. 1) in which the grip portion 5b is raised with respect to the sheets 2 and 3 so as to protrude from the opening 4 and form a loop suitable to facilitate gripping by the user; a folded configuration (Fig. 2) in which the grip portion 5b is folded back on itself so as to be housed at least partially in the opening 4.

[0019] It is therefore made of starched fabric, preferably, with a vinyl product and has, in correspondence with the grip portion 5b, one or more folding lines 5c around which the grip portion 5b tends to flex and/or bend, varying its configuration.

[0020] The handle 5 has a length, measured along the preferred extension axis 4a, at least equal to the length of the opening 4 and, more precisely, at least equal to twice the length of the opening 4. Furthermore, the handle 5 has a width, measured perpendicular to the preferred extension axis 4a, not greater than the width of the opening 4.

[0021] In order to obtain a handle for a box and, in particular, the handle 1 for a box described above structurally, a new production method 100 of a handle is introduced. The production method 100 comprises a movement step 200 in which a first roll 210 of first sheets 2 and a second roll 220 of second sheets 3 and a third roll 230 of handles 5 are unwound defining for the sheets 2 and 3 and the handles 5 feed directions 200a substantially parallel to each other.

[0022] The first roll 210 and second roll 220 are made of paper material and the third roll 230 is made of fabric. In detail, the rolls 210 and 220 are made of kraft paper and the third roll 230 is made of cotton.

[0023] Simultaneously with the movement step 200, the method 100 provides for a cutting step **300** in which on at least one of the sheets 2 and 3 and, preferably, on the first sheet 2 at least one opening 4 is made; a preparation step **400** of the handle 5; an assembly step **500** in which the handle 5 is glued between the sheets 2 and 3; and a separation step **600** in which the sheets 2 and 3 and the handle 5 are cut thus obtaining the handles 1.

[0024] In the cutting step 300, the opening 4 is made by means of a cutting die **310** and, more in particular, by means of a rotary cutting die 310 with a rotation axis almost perpendicular to the feed direction 200a.

[0025] The preparation step 400 is practically simultaneous to the step 300, and comprises a sub-step of folding **410** of the fabric so as to form loops identifying the grip portions 5b and spaced by almost flat junction areas identifying the ends 5a; and, if the fabric is not already starched, a sub-step of starching **420** by means of a vinyl product of the handle 5, and, in particular, at least of the grip portion 5b. Alternatively, in the case in which the fabric has been starched before the method 100, the preparation phase 400 comprises only the sub-step of folding 410. Substantially at the end of the steps 300 and 400, the production method 100 provides for the assembly step 500.

[0026] The assembly step 500 comprises a deposit sub-step **510** in which a glue **511**, preferably hot melt, is placed on the second sheet 3; a gluing sub-step **520** in which the fabric and, therefore, the handle 5 are glued to the second sheet 3; and a supplementary sub-step of gluing 530 in which the first sheet 2 is attached to the second sheet 3 enclosing the handle 5 between them.

[0027] Appropriately, the gluing step 520 is prior to the possible starching sub-step 420 which in turn, is preferably prior to the supplementary gluing step **530** (Fig. 4).

[0028] The gluing sub-step 520 is performed by a pressure roller **521** having a housing cavity suitable to house the grip portion 5b, i.e. the loop obtained in folding sub-step of 410, so as to press and, therefore glue the ends 5a to the second sheet 3. Appropriately, the pressure roller 521 is treated with non-stick material so as to avoid the presence of glue residues on said roller 521.

[0029] In addition to constraining the handle 5 to the second sheet 3, the action of the pressure roller 521 causes the glue 511 to be absorbed by the ends 5a and, in particular, to pass through the fabric of the ends 5a making itself available for the gluing of the first sheet 2.

[0030] Once beyond the pressure roller 521 the supplementary gluing sub-step 530 starts in which the first sheet 2 is glued to the second sheet 3 and to the handle 5.

[0031] In this sub-step 530 the first sheet 2 is associated to the second sheet 3 inserting the grip portion 5b in the opening 4 and enclosing the ends 5a between the sheets 2 and 3. It is then pressed and glued at the ends 5a and at the second sheet 3 by a supplementary pressure roller 531 having, similarly to the roller 521, a supplementary housing cavity for the grip portion 5b.

[0032] It should be noted moreover that, if necessary,

the assembly step 500 may provide for the gluing sub-steps 520 and 530 and, in particular, between the starching sub-step 420 and the supplementary gluing sub-step 530 a supplementary deposit sub-step 540 in which a supplementary glue 541 similar to that of the sub-step 510, i.e. hot melt is deposited on the ends 5a and on the second sheet 3.

[0033] After completing the gluing of the sheets 2 and 3, the separation step 600 takes place in which the sheets 2 and 3 and the fabric of the handle 5 are cut at the ends 5a separating the handles 1 from each other.

[0034] The invention achieves important advantages.

[0035] A first important advantage is represented by the fact that the handle 1 is particularly convenient and practical to use.

[0036] In fact, the handle 5, being made of fabric, is easy to grip and extract from the opening 4 since it is easy to distend into a configuration for use.

[0037] Another advantage is that the grip 5 and thus the handle 1 are extremely comfortable to use even in the case of particularly heavy objects/ boxes to be lifted.

[0038] This advantage is achieved thanks to the choice of using fabric and, in particular, cotton as construction material of the handle 5.

[0039] A further advantage is the high-resistance, and thus durability of the handles 1. This aspect has been achieved, by the choice of treating the fabric with vinyl starch as well as by the use of fabric to manufacture the handle.

[0040] Furthermore, the starching, together with the presence of the folding lines 5c, causes the grip portion 5b, when not in use, to automatically return to the folded configuration and it thus closes into the opening 4 limiting the overall dimensions of the handle 1.

[0041] Indeed, the presence of the folding lines 5c and the starching make the grip portion 5b deform elastically when it passes from the folded configuration to that of use, and it therefore tends to return to the folded configuration when the user's action on the said portion 5b ceases.

[0042] The invention is susceptible to variation within the inventive concept. All the elements as described and claimed herein may be replaced with equivalent elements and the scope of the invention includes all other details, materials, shapes and dimensions.

Claims

1. Handle (1) for a box comprising two sheets (2, 3) of paper material overlapping and integrally bound to each other: at least one opening (4) made on one of said sheets (2, 3); a handle (5) interposed between said sheets (2, 3) and defining two ends (5a) opposite each other and a grip portion (5b) between said ends (5a); said ends (5a) being integrally bound between said sheets (2, 3) placing said grip portion (5b) over said opening (4); and **characterised in that** said

handle (5) is made of fabric.

2. Handle (1) according to claim 1, wherein said handle (5) is a fabric made with a yarn selected from cotton, polyester, polypropylene, rayon and hemp. 5
3. Handle (1) according to the previous claims, wherein said handle (5) is in cotton.
4. Handle (1) according to one or more of the previous claims, wherein said handle (5) is made of starched material. 10
5. Handle (1) according to one or more of the previous claims, wherein said handle (5) is made of material starched with a vinyl product. 15
6. Handle (1) according to one or more of the previous claims, wherein said sheets (2) are made of kraft paper. 20
7. Handle (1) according to one or more of the previous claims, wherein said sheets (2) are made of pure cellulose kraft paper. 25
8. Handle (1) according to one or more of the previous claims, wherein said sheets (2) are integrally constrained to each other by glue.

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Fig. 1

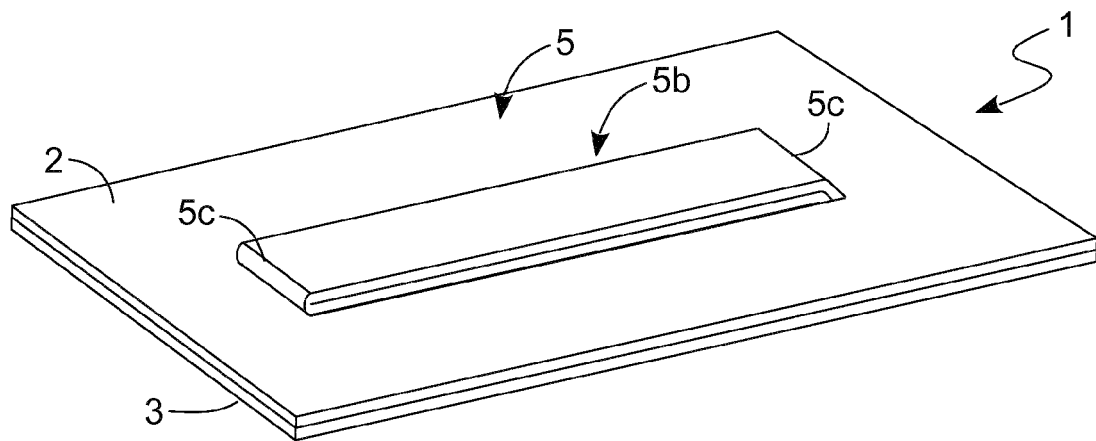
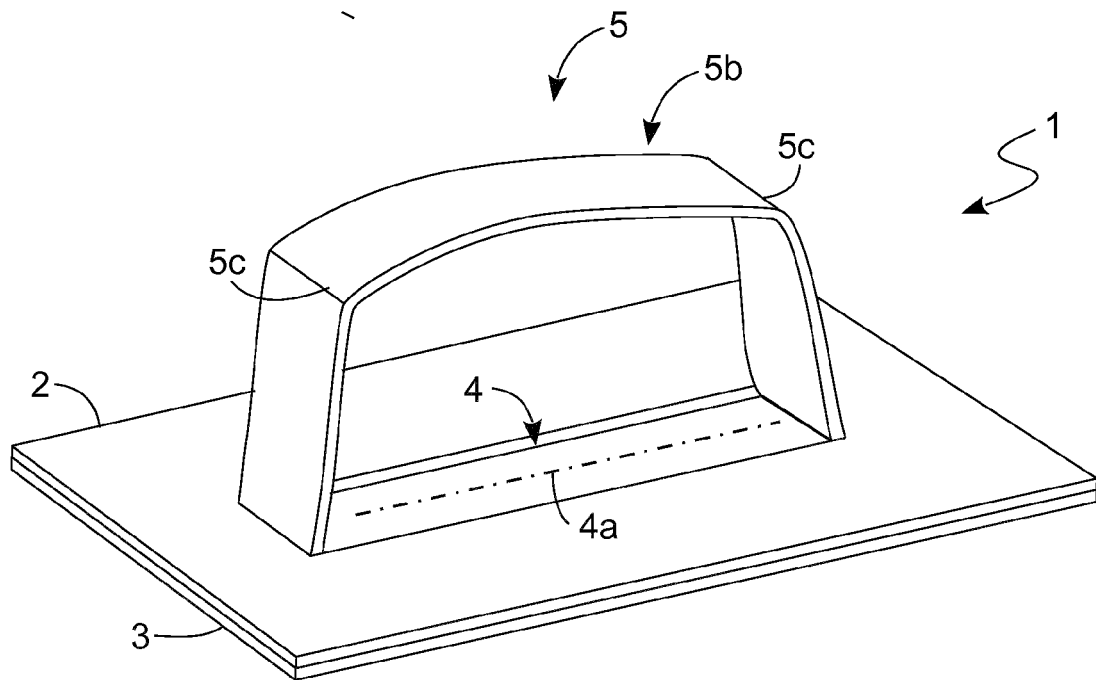


Fig. 2

Fig. 3

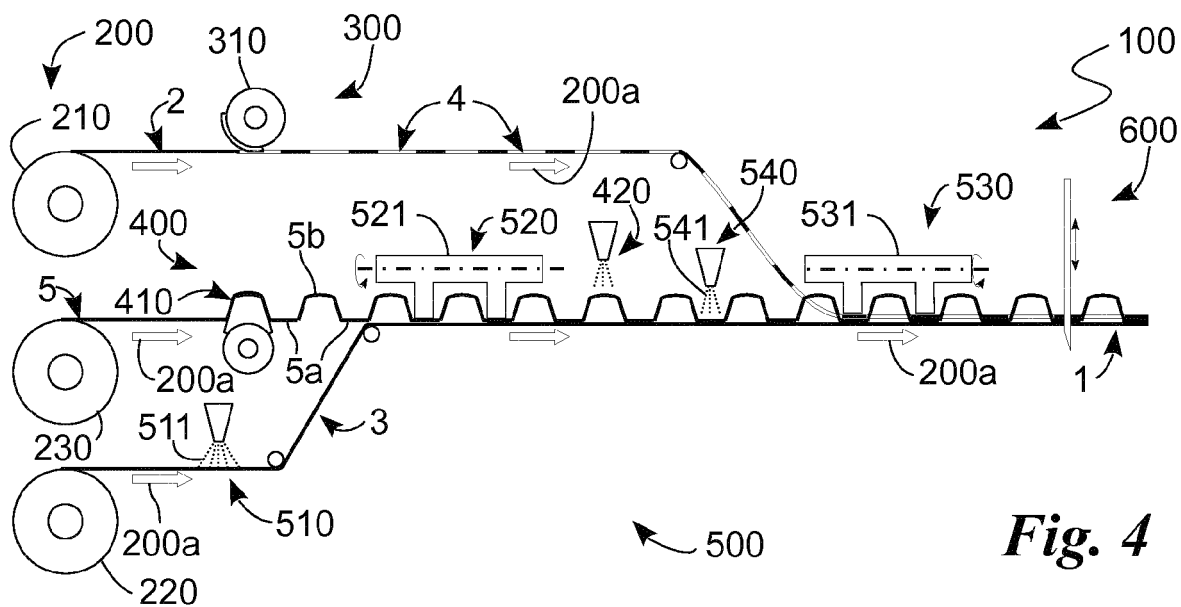
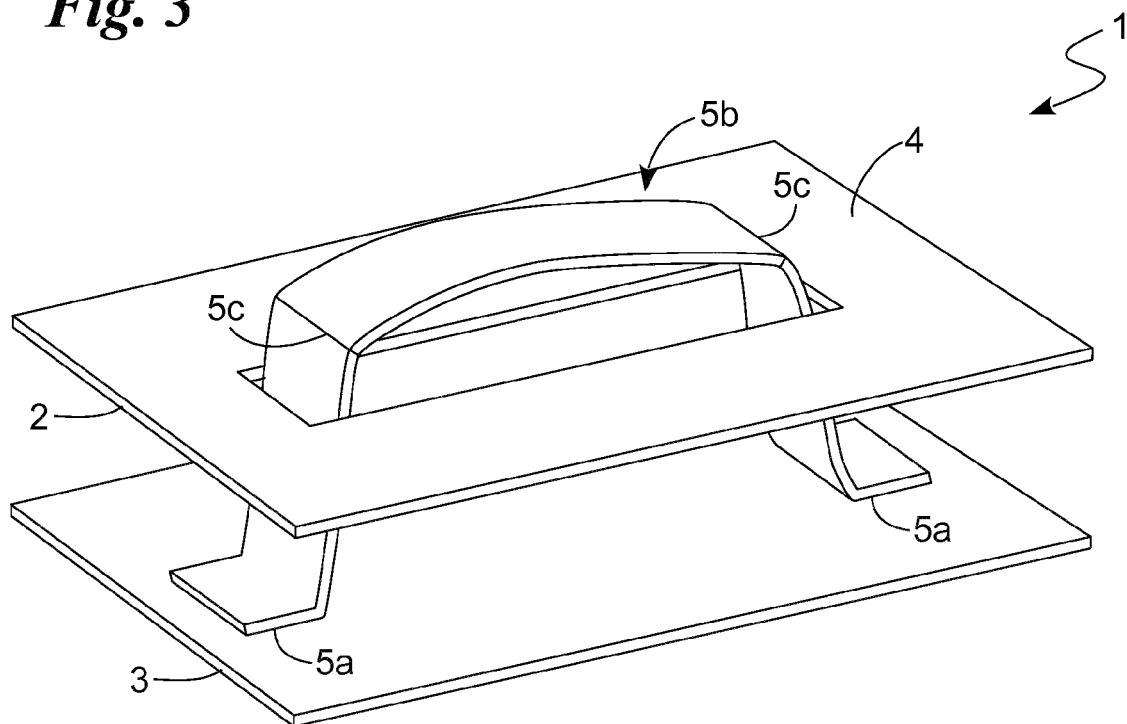


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 15 16 0757

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 94/08856 A1 (ROBERTS SYSTEMS INC [US]) 28 April 1994 (1994-04-28) * page 4, line 2 - line 10 * * page 5, line 13 - line 32; claims 1-12; figures 2-5,7 *	1-8	INV. B65D5/46
A	US 5 518 174 A (BOTTERMAN DAVID L [US]) 21 May 1996 (1996-05-21) * column 2, line 53 - line 61; figures 1,9 *	1-8	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 23 July 2015	Examiner Janosch, Joachim
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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23-07-2015

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WO 9408856	A1	28-04-1994	NONE

US 5518174	A	21-05-1996	NONE

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