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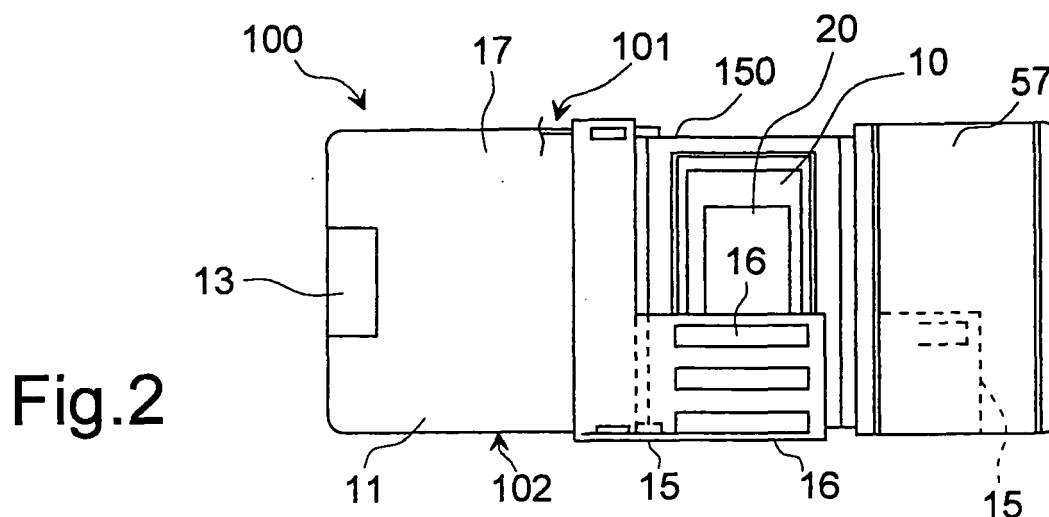
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(54) **Detergent tablet dispenser for dishwasher**

(57) There is disclosed a doser of detergent tablets (20) for dishwashers; the dishwasher comprises means (7) for washing crockery and the doser comprises a hollow part (10) for housing the tablet of detergent, a door (11, 110, 26) for closing the hollow part and opening means for opening the door during washing of the crock-

ery. The doser comprises a grille-shaped part (15, 25, 35, 45) suitable for containing said tablet of detergent (20) during washing of the crockery with said door (11, 110, 26) open, said grille-shaped part comprising openings (16) for the flow and draining of the washing water (Figure 2)



Description

[0001] The present invention relates to a doser of detergent tablets for dishwashers.

[0002] In the prior art, detergent dosers for dishwashers are known that are arranged on the inner wall of the door of the dishwasher. Said dosers are detergent containers provided with a door that is automatically opened during washing so as to output the detergent for washing crockery.

[0003] Currently, instead of detergent in powder or liquid form, detergent tablets are often used for washing crockery. The tablet is inserted manually into the detergent doser and, after the door connected to the doser is opened, falls into a zone of the dishwasher in which the washing water dissolves the tablet to wash the crockery.

[0004] In dishwashers with many place settings, for example from 15 place settings, the tablet, after the door of the doser is opened, often does not fall into a zone of the dishwasher that is suitable for the complete dissolution thereof. Thus at the end of the washing step, the tablet is not completely dissolved, with unpleasant consequences due to the poor washing of the crockery.

[0005] In view of the disclosed state of the art, the object of the present invention is to provide a doser of detergent tablets for dishwashers that overcomes the afore-said drawback.

[0006] According to the present invention, this object is achieved by means of a doser of detergent tablets for dishwashers, said dishwashers comprising means for washing crockery, said doser comprising a hollow part for housing the tablet of detergent, a door for closing the hollow part and opening means for opening the door during washing of the crockery, **characterised in that** it comprises means suitable for containing said tablet of detergent during washing of the crockery with said door open, said containing means comprising openings for the flow and the deflux of the washing water.

[0007] According to the present invention, this object is achieved by a door for dishwashers as defined in claim 9.

[0008] The features and the advantages of the present invention will become clear from the following detailed description of embodiments thereof that are illustrated by way of non-limiting example in the attached drawings, in which:

Figure 1 shows a dishwasher provided with a door with a doser of detergent tablets according to the present invention;

Figure 2 is a frontal view of a doser of detergent tablets for dishwashers according to a first embodiment of the invention;

Figure 3 is a side view of the doser in figure 2;

Figure 4 is a top view of only the door of a doser of detergent tablets for dishwashers according to a version of the first embodiment of the invention;

Figure 5 is a top view of the doser in figure 2 with

the door open;

Figure 6 is a top view of the doser in figure 2 with the door closed;

Figures 7-8 show a doser of detergent tablets for dishwashers according to a second embodiment of the invention;

Figures 9-10 show a doser of detergent tablets for dishwashers according to a third embodiment of the invention;

Figure 11 shows a doser of detergent tablets for dishwashers according to a fourth embodiment of the invention.

[0009] With reference to Figure 1, a dishwasher is shown which is provided with housing 1 that encloses a chamber 8, i.e. the washing chamber, provided with baskets 2 and 3 for containing the crockery. The chamber 8 comprises means 7 for washing crockery and is provided with a closing door 4 in which a doser of detergent tablets 100 according to the present invention is installed.

[0010] With reference to Figures 2, 3, 5 and 6 the doser 100 of detergent tablets 20 for dishwashers according to a first embodiment of the invention is shown. The tablet doser, in a known manner, comprises a hollow part 10 that is normally closed by a door 11; the hollow part belongs to a structure 17 of the doser. The door 11 is preferably slidable with pivots 18 on horizontal guides 12 arranged in the upper 101 and lower part 102 of the frame 150 of the hollow part 10 and of the structure 17; a manually operated pushbutton 13 enables the door to be released that runs along the guides 12 and enables the hollow part 10 to be opened. The door 11 is normally operated by a solenoid valve (not shown in the figures) on which an electric current acts; this occurs in a known manner during washing of the crockery.

[0011] The doser comprises a grid-shaped part 15 associated with the hollow part 10 once the door 11 is opened according to the invention. Preferably, the grid-shaped part 15 is integral with the door 11 so that, with the door 11 open, the grid-shaped part 15 also slides along the guides 12 to be arranged frontally to the hollow part 10. In this manner, the grid-shaped part 15 retains in the seat, i.e. in the hollow part 10, the tablet of detergent 20 during washing of the crockery. The tablet of detergent 20 would otherwise fall into the bottom of the washing tank 8 of the dishwasher or to another zone of the washing tank; the grid-shaped part 15 has areas 16 for the passage of the washing water that is suitable for completely dissolving the tablet 20 during washing of the crockery.

[0012] When the door 11 closes the hollow part 10, the grid-shaped part 15 is arranged opposite the structure 17 (Figure 2); the door 11 maintains the tablet 20 inside the hollow part 10 when closes the same hollow part 10. The grid-shaped part 15 slides along the guides 12 to be arranged, when the door 11 is open, opposite the hollow part 10 to contain the tablet 20 during washing of the crockery so as to facilitate the dissolving thereof; when the door 11 closes the hollow part 10, the grid-shaped

part 15 slides to arrange itself opposite a part 57 of the structure 17 which is adjacent to the hollow part 10.

[0013] In Figure 4 there is shown the door of a doser of detergent tablets according to a variant of the first embodiment of the invention. As only difference from the first embodiment, the doser in Figure 4 comprises a door 110 hooked only to the lower part 102 of the frame 150 of the hollow part; the door 110 is provided with pivots 18 that are slidable on a guide 12 arranged in the lower part 102 of the frame 150 of the hollow part 10 and of the structure 17.

[0014] In Figures 7-8 a doser of detergent tablets for dishwashers according to a second embodiment of the invention is shown. In said embodiment the doser of detergent tablets comprises, as a difference of the preceding embodiment, a grid-shaped part 25 that is integral with the hollow part 10 of the doser. The grille-shaped part 25 maintains the tablet 20 in the seat both with the door 26 closed and with the door 26 open; the door 26 has a radial opening and is preferably hinged on the structure of the frame 150 of the hollow part 10, in the upper 101 or lower part 102. The grid-shaped part 25 is fixed to the lower wall 27 of the hollow part 10 and, preferably, comprises two vertical elements 28 suitable for maintaining in the seat the tablet 20 but suitable for enabling the washing water to flow inside the hollow part 10 to dissolve the tablet 20 during washing of the crockery.

[0015] In Figures 9-10 a doser of detergent tablets for dishwashers according to a third embodiment of the invention is shown. In said embodiment, the doser of detergent tablets comprises, as a difference of the preceding embodiment, a grid-shaped part 35 connected in a rotatable manner to the hollow part 10 of the doser. There is a door 26 with a radial opening for closing the hollow part 10; said door can be hinged in the upper 101 or lower part 102 of the frame 150 of the hollow part 10. The grid-shaped part 35 comprises pivots 36 arranged in suitable seats of the hollow part 10 that enable the grille-shaped part 35 to rotate; the grid-shaped part 35 can also be obtained from the structure of the radial opening and closing door 26 of the hollow part 10. The grid-shaped part 35 is made as a cage and comprises vertical elements 37 arranged so as to form a rectangular bag suitable for receiving the tablet 20. With the door closed the grid-shaped part 35 with the tablet 20 is arranged inside the hollow part 10; with the door 26 open, the grid-shaped part 36 rotates around the axis that passes between the pivots 36 to the outside of the hollow part 10 to obtain more rapid dissolution of the tablet 20 during the operation of washing of the crockery.

[0016] In Figure 11 a doser of detergent tablets for dishwashers according to a fourth embodiment of the invention is shown. In said embodiment the doser of detergent tablets comprises, differently from the first embodiment, a grid-shaped part 45 that is integral with the doser. The grid-shaped part 45 is arranged opposite the hollow part 10 so that, after the door 11 is opened, the grid-shaped part 45 can contain the tablet 20 outputted

from the hollow part 10. The grid-shaped part 45 is fixed to the lower part of the doser, in particular to the lower part of the frame 150 and of the structure 17 and, preferably, comprises openings suitable for enabling the flow of washing water to dissolve the tablet 20 during washing of the crockery.

Claims

1. Doser of detergent tablets (20) for dishwasher, said dishwasher comprising means (7) for washing crockery, said doser comprising a hollow part (10) for housing the tablet of detergent, a door (11, 110, 26) for closing the hollow part and opening means for opening the door during washing of the crockery, **characterised in that** it comprises means (15, 25, 35, 45) suitable for containing said tablet of detergent (20) during washing of the crockery with said door (11) open, said containing means (15, 25, 35, 45) comprising openings (16) for the flow and the deflux of the washing water.
2. Doser according to claim 1, **characterised in that** said door (11) is slidable along at least a guide (12) arranged on the external frame (150) of the hollow part (10), said containing means is a grid-shaped part (15) fixedly connected to said door so as to retain inside the hollow part said tablet of detergent during washing of the crockery with said door open.
3. Doser according to claim 2, **characterised in that** said door (11) comprises pivots (18) for sliding along guides (12) arranged on the lower part (102) and upper part (101) of the external frame (150) of the hollow part (10).
4. Doser according to claim 2, **characterised in that** said door (11) comprises pivots (18) for sliding along a guide (12) arranged on the lower part (102) of the external frame (150) of the hollow part (10).
5. Doser according to claim 1, **characterised in that** said containing means (25) is fixedly connected to the hollow part (10) so as to maintain said tablet of detergent inside the hollow part with the door (26) open.
6. Doser according to claim 1, **characterised in that** said containing means (35) is rotatably connected to said hollow part so as to rotate outside the hollow part with the door (26) open.
7. Doser according to claim 1, **characterised in that** said containing means (45) is integral with the doser and is arranged so as to contain detergent tablet outputted from the hollow part with door open.

8. Doser according to claim 7, **characterised in that** said containing means (45) is integral with the lower part (102) of the external frame (150) of the hollow part (10).

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9. Dishwasher door (4), said dishwasher comprising a chamber (8) for washing crockery and means (7) for washing crockery, said door being suitable for closing said chamber, said door comprising a doser of detergent tablets (100) as defined in any one of the preceding claims.

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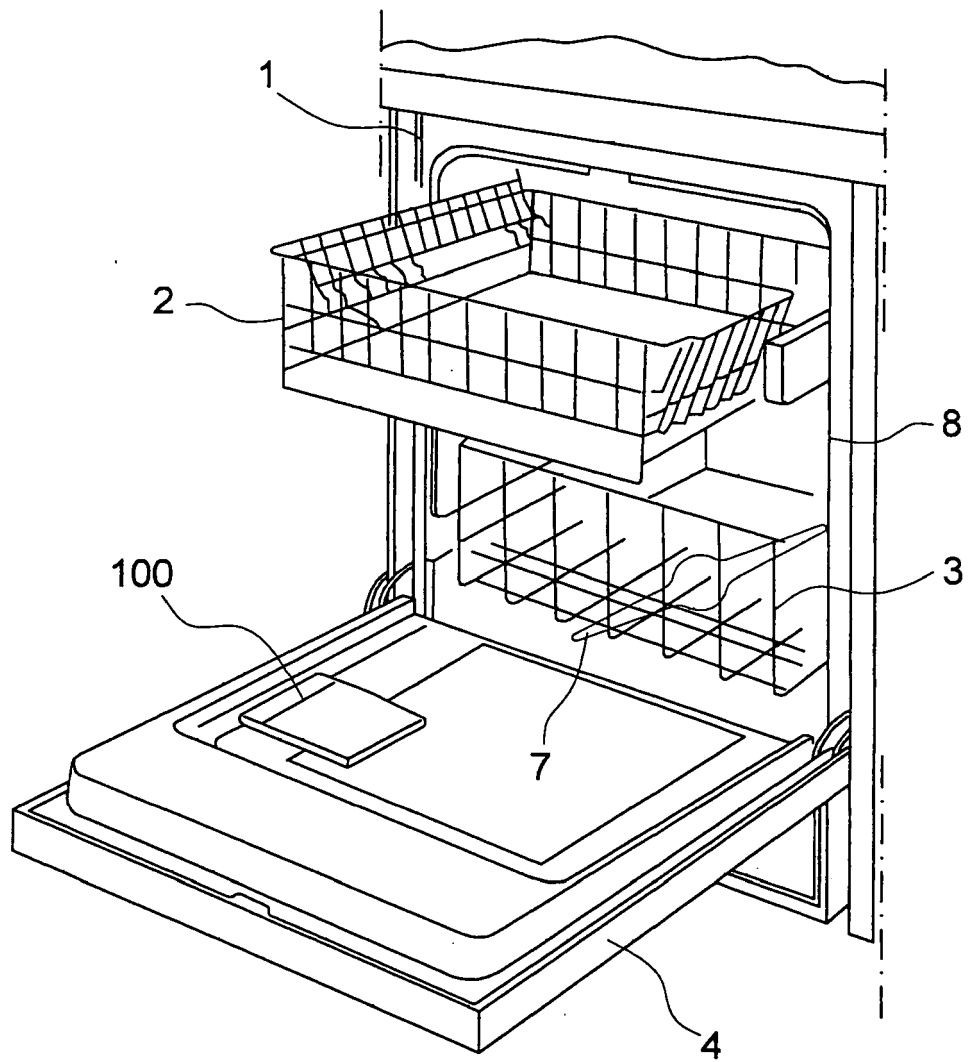


Fig.1

Fig.2

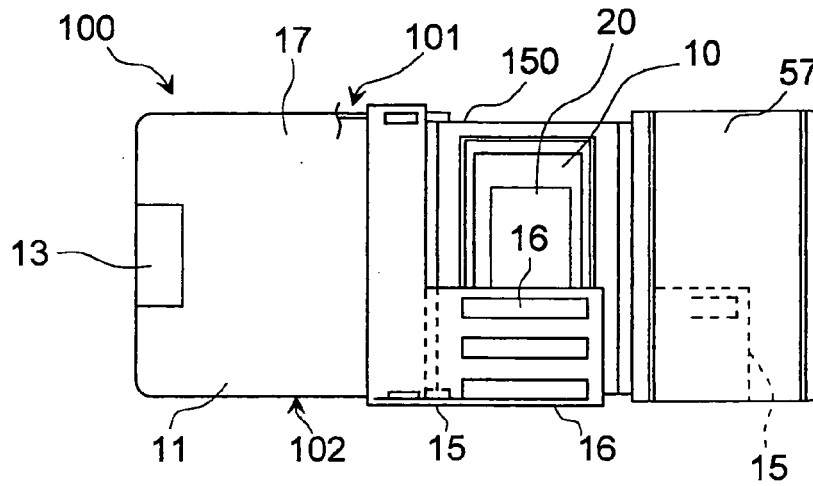


Fig.3

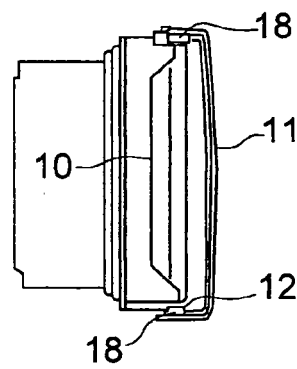


Fig.4

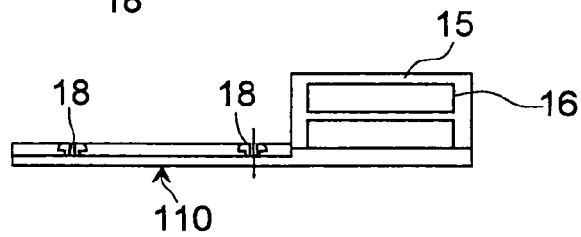


Fig.5

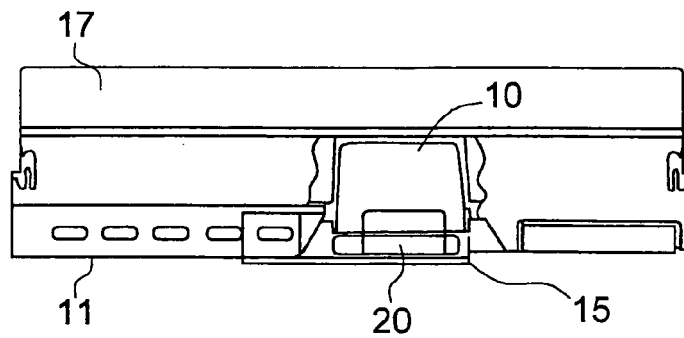
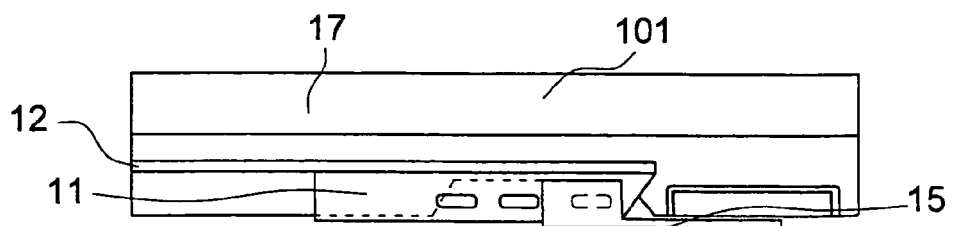
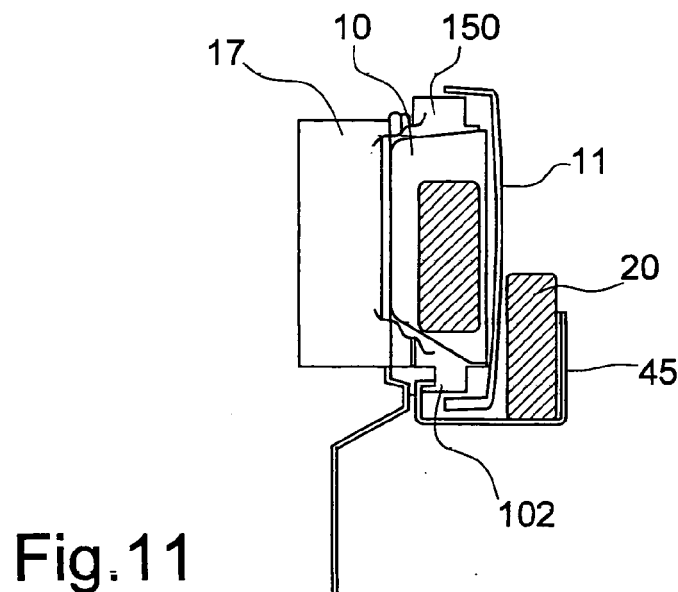
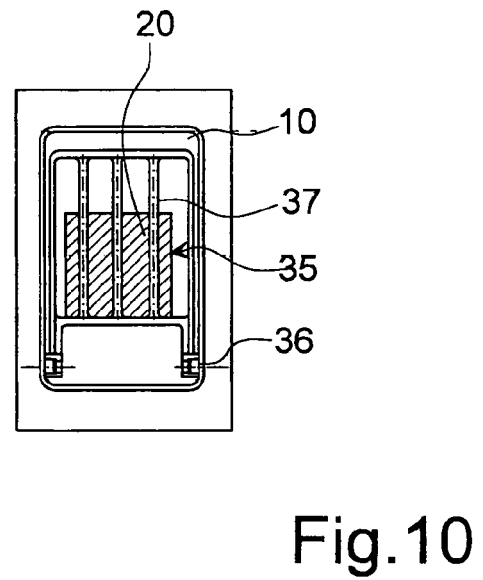
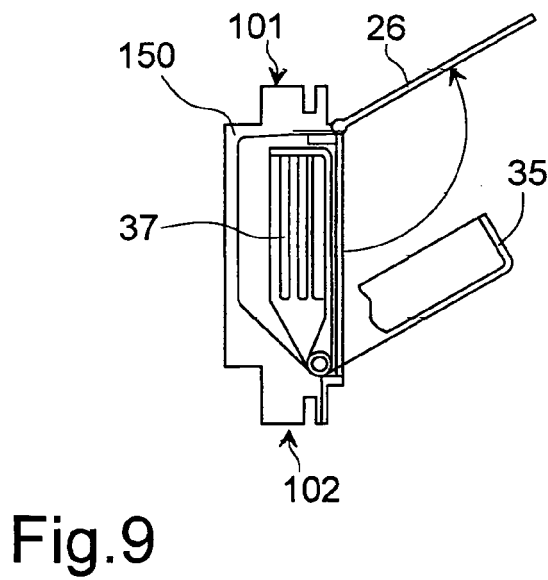
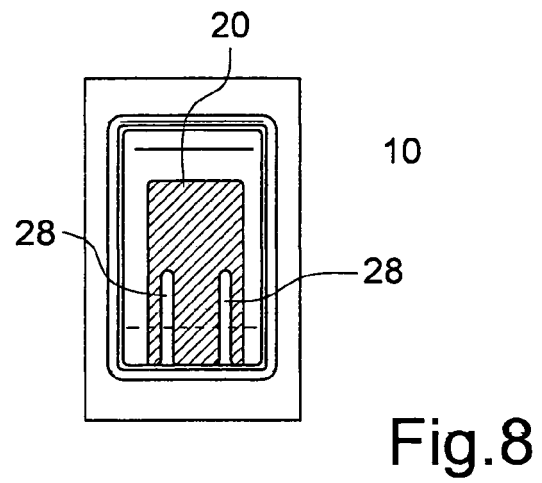
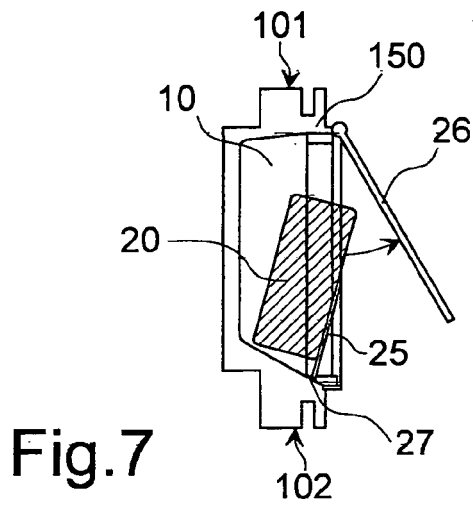


Fig.6







EUROPEAN SEARCH REPORT

 Application Number
 EP 08 42 5452

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A	* paragraphs [0009], [0012] - [0015], [0020], [0021]; figures 2,4,5 *	1,5-9	
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Place of search Munich		Date of completion of the search 16 December 2008	Examiner Clarke, Alister
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
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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