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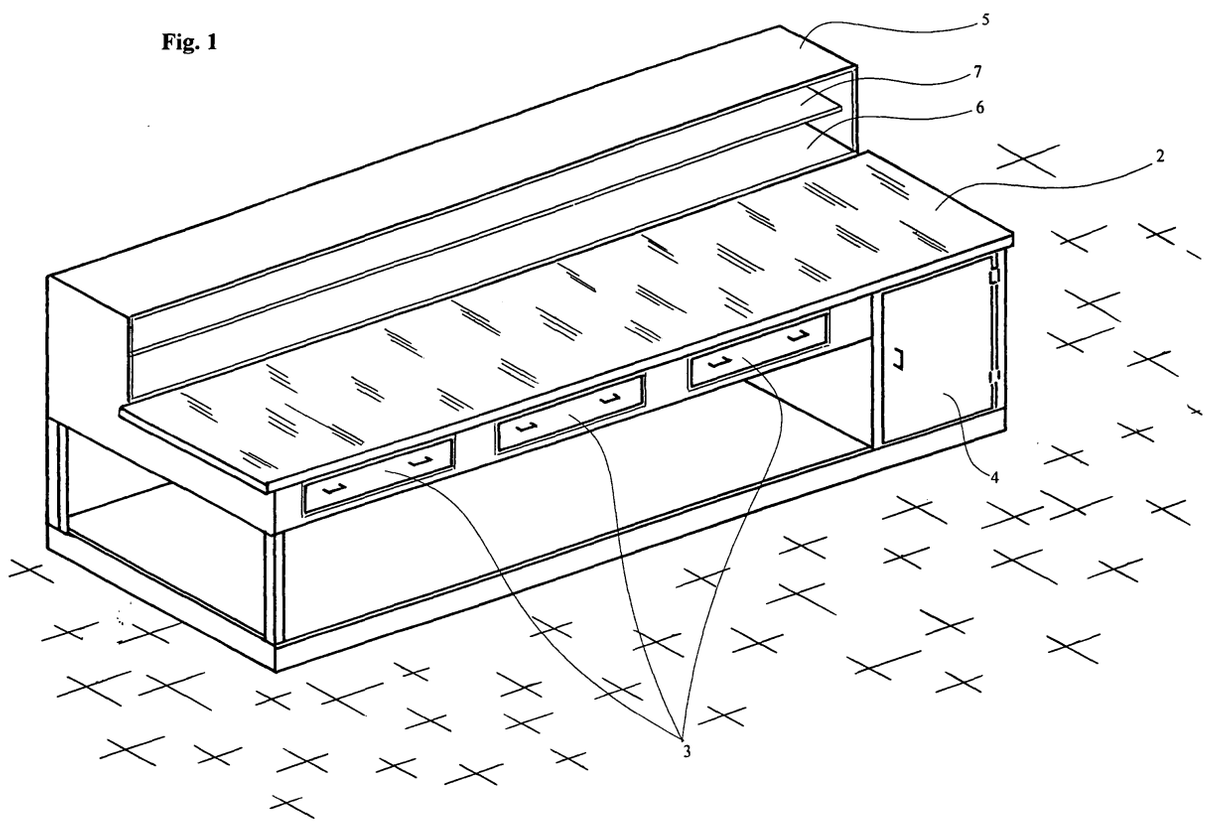
(54) Worktop for pizzerias

(57) A worktop of glass that is frosted after acid treatment, for working and rolling out balls of dough in order to make them thin, like the disks for pizza obtained from already-prepared dough balls.

Fig. 1



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Description

[0001] The productive cycle of pizzas in pizzerias is made up of a sequence of phases.

[0002] The operations begin with the extraction of balls of dough that are purchased from the market and kept in a refrigerator or, alternatively, that are extracted a few hours before using from appropriate containers in which they were positioned by the pizza chef who made them during the day.

[0003] In accordance with the season, the dough balls extracted from the refrigerator initially undergo a thermal shock, which creates a layer of condensation water over them.

[0004] Recently made dough balls that are not cooled in the refrigerator are generally softer because this film of condensation does not appear.

[0005] In both cases the pizza chef extracts the selected dough balls of the programmed weight and, after covering them with flour, begins extending them in order to obtain thinner disks.

[0006] The number of disks that the worktop holds depends on the size of the worktop and on the receiving capacity of the oven.

[0007] A period of time that must not exceed the drying time of the first disk passes between making the first and the last disk. The longer the disk remains on the surface, the more difficult it is to remove, because a glue-like bond is created between the disk and the worktop.

[0008] Different ingredients which characterise the pizza are distributed over the surface of these disks (these ingredients change according to the requests of the consumer).

[0009] Pizzas with an uncooked dough disk made in this manner are removed from the worktop using a shovel and are placed in the oven for cooking. They are kept inside the oven for the time necessary to cook the dough, and after extraction they are ready to be served to the purchaser.

[0010] Some of the problems that the pizza chef currently faces in this operative cycle, and in particular regarding the extraction of the dough from the refrigerator, are listed below.

[0011] Current worktops are made of wood or granite.

[0012] As the balls of dough are extracted from the refrigerator and come into contact with the external environment, a film of condensate water appears.

[0013] If working on a wooden surface, the following occurs:

[0014] During the dough spreading phase the condensate water which has formed on the external surface of the ball, and also the water contained in the dough itself, tend to wet the worktop.

[0015] The pizza chef therefore dusts the worktop with flour in order to neutralise this water.

[0016] As a result, the base of the obtained disk is covered by an excessive layer of dry dough which is unpleasant for the consumer. In addition, a part of this layer detaches itself during cooking and remains on the cooking surface of the oven.

[0017] These residues accumulate after a few batches, lowering the thermal return because of reduced thermal transmission.

[0018] These crusts must then be removed from the cooking surface of the oven, which damages the oven itself and also lowers productive return because of the time needed to clean.

[0019] All these inconveniences mean notable economic damage.

[0020] Other inconveniences connected with the use of a wooden worktop are determined by the difficulty in cleaning this type of surface, which causes detrimental effects from a hygiene-health point of view.

[0021] If working on a granite surface the following occurs:

while extending the dough ball, the condensate water that has formed on the outside of the ball, as well as the water contained in the dough itself, tend to wet the worktop.

[0022] The pizza chef must also in this case dust the worktop with dry flour in order to neutralise the aforementioned water.

[0023] As a result, the base of the obtained disk is covered by an excessive layer of dry dough (unleavened) which is unpleasant for the consumer. In addition, part of this layer detaches itself during cooking and remains on the cooking surface of the oven.

[0024] Even in this case these residues accumulate after a few batches, again lowering thermal return because of reduced thermal transmission.

[0025] These crusts must then be removed from the cooking surface of the oven, which damages the oven itself and also lowers productive return because of the time needed to clean.

[0026] All these inconveniences result in notable economic damage.

[0027] Another inconvenience is that granite has a greater thermal conductivity than wood therefore the condensation phenomenon is accentuated, which increases adhesion when a ball is placed directly onto the granite surface. In addition, the surface is not continuous but contains multiple small pores and flaws of a dendritic type, which make cleaning difficult. This causes detrimental effects from a hygiene-health point of view.

[0028] It is difficult to extend a dough ball on a normal, shiny glass surface, because the ball tends to stick when its humidity penetrates. If flour is sprinkled abundantly over the worktop to stop this, the flour thickens the base of dry dough (unleavened), which is rather unpleasant for the consumer.

[0029] In addition, a part of this layer detaches itself during cooking and remains on the oven base, which causes subsequent cleaning problems because the oven cannot maintain its original thermal transmission, and it is obvious that the work of the pizza chef slows.

[0030] A glass sheet with a sanded surface was therefore tested in order to avoid the inconveniences connected with the shiny surface of an untreated glass worktop. Instead of obtaining improvements, however, even more serious problems were found.

[0031] The surface, which had been sculpted by abrasive lapilli, presented a high level of superficial roughness that was very irregular.

[0032] Extending the dough resulted as being difficult and the disks broke during the final thinning phase because of the resulting grip.

[0033] The surface could not be cleaned in a satisfactory manner between one cycle and another while working, nor when working was completed.

[0034] In this case, the productivity that the pizza chef must achieve is not obtained, therefore the rhythm of delivery to the waiting clients slows and the normal client turnover reduces as a consequence.

[0035] The ideal solution for all the aforementioned inconveniences that occur with the different types of worktop is obtained using a worktop of tempered glass, the surface of which has undergone an acid and subsequent frosting treatment.

[0036] The surface no longer presents the characteristic shine of normal glass but a smooth, opaque surface.

[0037] The surface is regular, without the characteristic roughness of glass that has undergone sand treatment.

[0038] Frosting the glass worktop stops the dough from sticking to the surface and also stops the problem of friction.

[0039] This means that less flour can be used, which in turn means that less flour is deposited inside the oven during cooking and this gives a double result. Firstly, the surface on which the disk cooks is cooled (caused by the accumulation of flour which acts as a thermal insulator) in a limited manner, and secondly, the maintenance that needs to be carried out on the oven being used reduces notably.

[0040] Oven brushing and cleaning are, indeed, directly connected to the accumulation of flour.

[0041] Another advantage of the frosted glass worktop is that the dough can stay longer in contact with the frosted surface before it begins sticking, because of surface impermeability.

[0042] The result of this advantage is verified by the increase in the hourly production caused by the possibility of increasing the number of pizzas to be baked and the reduction of the rejects (pizzas that break because difficult or impossible to detach normally from the worktop).

[0043] To prevent the glass from chipping, and to avoid chips from being included in the dough that is being worked, the worktop is tempered before being bevelled and before rounding the corners.

[0044] It is well known that when tempered glass undergoes knocks or strong vibrations it does not release chips, and its possible yielding is shown by well defined signs. Any fragmentation and crushing arising from these signs create innocuous grains.

[0045] To clarify what has been expressed previously, the diagram tables (enclosed) should be examined.

Fig. 1 shows a worktop for pizza chefs positioned above a bench equipped with drawers and a section for personal objects. The two shelves at the rear are kept cool by a refrigerator group.

Fig. 2 shows a schematic, much enlarged drawing of a reduced portion of a wooden worktop, and fig. 2' shows a section of the portion of wooden surface shown in fig. 1 which highlights the surface flow of the worktop.

Fig. 3 shows a schematic, much enlarged drawing of a reduced portion of a granite worktop, and fig. 3' shows a section of the portion of granite surface shown in fig. 3 which highlights the surface flow of the worktop.

Fig. 4 shows a schematic, much enlarged drawing of a reduced portion of a glass worktop with sanded surface, and fig. 4' shows a section of the portion of sanded glass surface shown in fig. 4 which highlights the surface flow of the worktop.

Fig. 5 shows a schematic, much enlarged drawing of a reduced portion of a glass worktop with a surface that has been frosted before acid treatment, and fig. 5' shows a section of the portion of same glass surface shown in fig. 5 which highlights the surface flow of the worktop.

[0046] It can be seen in fig. 1 that the pizza chef has a suitable bench (1), the worktop (2) of which in the case of this patent is made up of a thick sheet of tempered glass, the surface of which has been frosted before acid treatment.

[0047] Whenever necessary, the pizza chef extracts a batch of balls (not shown in the diagram) from a refrigerator or from a previously prepared store and places them on the rear section which is kept cool by a cooling source.

[0048] In the diagram, this rear section is represented with shelving but is usually made with underlying containers into which the food that is to be placed on the already extended pizza is inserted from above.

[0049] As this bench is to be used for working, it is equipped with drawers (3) to hold any equipment that may be necessary and a cupboard (4) with door, suitable for containing cleaning items (cloths, detergents, etc.).

[0050] The discontinuity of the surface of the wooden worktop (8) can be clearly seen in fig. 2, which shows a small enlarged section of same.

[0051] It is known that wood is characterised by a mixture of hard and soft fibres. The fibre structure can also be seen in the corresponding section of fig. 2' and the run of the worktop surface (10) is neither smooth nor continuous.

[0052] Wood in itself is a warm material, but is inclined to absorb any water it comes into contact with.

[0053] The discontinuity of the surface of the granite worktop (11) can be seen in fig. 3, which shows a small enlarged section of same.

[0054] Granite, in fact, is a matrix surrounded by hard granules. The matrix is softer than the granules and presents pitted, dendritic discontinuities.

[0055] The run of the worktop surface (13) is shown in fig. 3', and it can be seen that the phenomenon of material constitution regarding the matrix and the hard granules is true even internally (12). Granite is a material with small pores that are positioned in particular around the granules, therefore water can penetrate more easily because of capillarity.

[0056] From fig. 4, which represents (enlarged) a small portion of the glass with sanded surface worktop (14), a diffusion of upward projecting bumps can be seen, therefore the surface (16) as schematised in the section of fig. 4' results as having indents and as being uneven.

[0057] Internally (15), the homogeneous and compact structure that is characteristic of glass is maintained.

[0058] From fig. 5 which represents (enlarged) a small portion of the glass with frosted surface worktop (16), it can be seen that the surface does not have interruptions. An examination of the section of fig. 5' shows that the surface is slightly aggressive at a molecular level, while maintaining its original flat profile almost unchanged.

[0059] Internally (15), the material maintains the homogeneous, compact structure that is characteristic of glass.

[0060] It should be noted that the worktop for pizzerias is also ideal for working dough that can be sweetened in order to obtain pastries.

[0061] In other words, different dough mixtures can be used to obtain sweet pastry disks in the same manner as dough balls can be used to make thin savoury disks.

[0062] As already demonstrated, the glass worktop described in this patent has been frosted before acid treatment and thanks to its special surface (which lets the dough slide) it is ideal in all cases where the dough (for pizzas, cakes, bread, etc.) tends to stick and the chef is forced to use methods for avoiding this, such as flour or oil.

[0063] The patent can also be favourably applied to other food sectors because the surface is easy to clean and any damage (chips, etc. which are difficult to see and clean), arising also from dirt and microbes nestling inside interstices, can be verified easily.

[0064] When applied to other sectors similar to the non-limiting example given, the patented surface has another advantage, namely the consistency of the material used. This material is almost impermeable to the water contained in the dough, therefore same water or other liquids do not penetrate the compact matrix of the glass.

[0065] In addition, the size or frosting degree of the surface can be varied according to the needs of the dough or other food that is worked upon it, favouring sliding either with or without lubrication (e.g. flour, oil, etc.) and without compromising total cleanliness.

[0066] The patent covers any improvements that persons who are experts in the field may make using the claims deriving from this invention.

Claims

1. Worktop for pizzerias **characterised by** the fact that the surface on which the pizza chef handles the dough to obtain thin disks for pizzas is made of glass. Same glass surface has been frosted after acid treatment in order to cause uniformly distributed small pores without compromising the original levelling.

2. The worktop for pizzerias of claim 1) **characterised by** the fact that the frosted glass surface is tempered, in order to support the pressure stress imposed by the pizza chef while working.

3. The worktop for pizzerias of claim 2) **characterised by** the fact that the corners of the perimeter are bevelled and/or rounded in order to exclude indentations that in normal glass would be a trigger for breakage.

4. The worktop for pizzerias of claim 1) **characterised by** the fact that the surface is non-stick during working to obtain pastries for food consumption, as are pizzas.

5. The worktop for pizzerias of claim 1) **characterised by** the fact that the surface results as being basically without friction while the dough is being expanded by the pizza chef during the dough manipulation phase.

6. Worktop for food businesses made of glass, the worktop of which is frosted, possibly obtained from previous acid treatment, which causes evenly distributed small pores without compromising the original levelling.

7. Worktop for food businesses of claim 6) **characterised by** the fact that the frosting is carried out to obtain small pores that are suitable for the product being used, which permits the product or similar to slide easily over the surface while being worked.

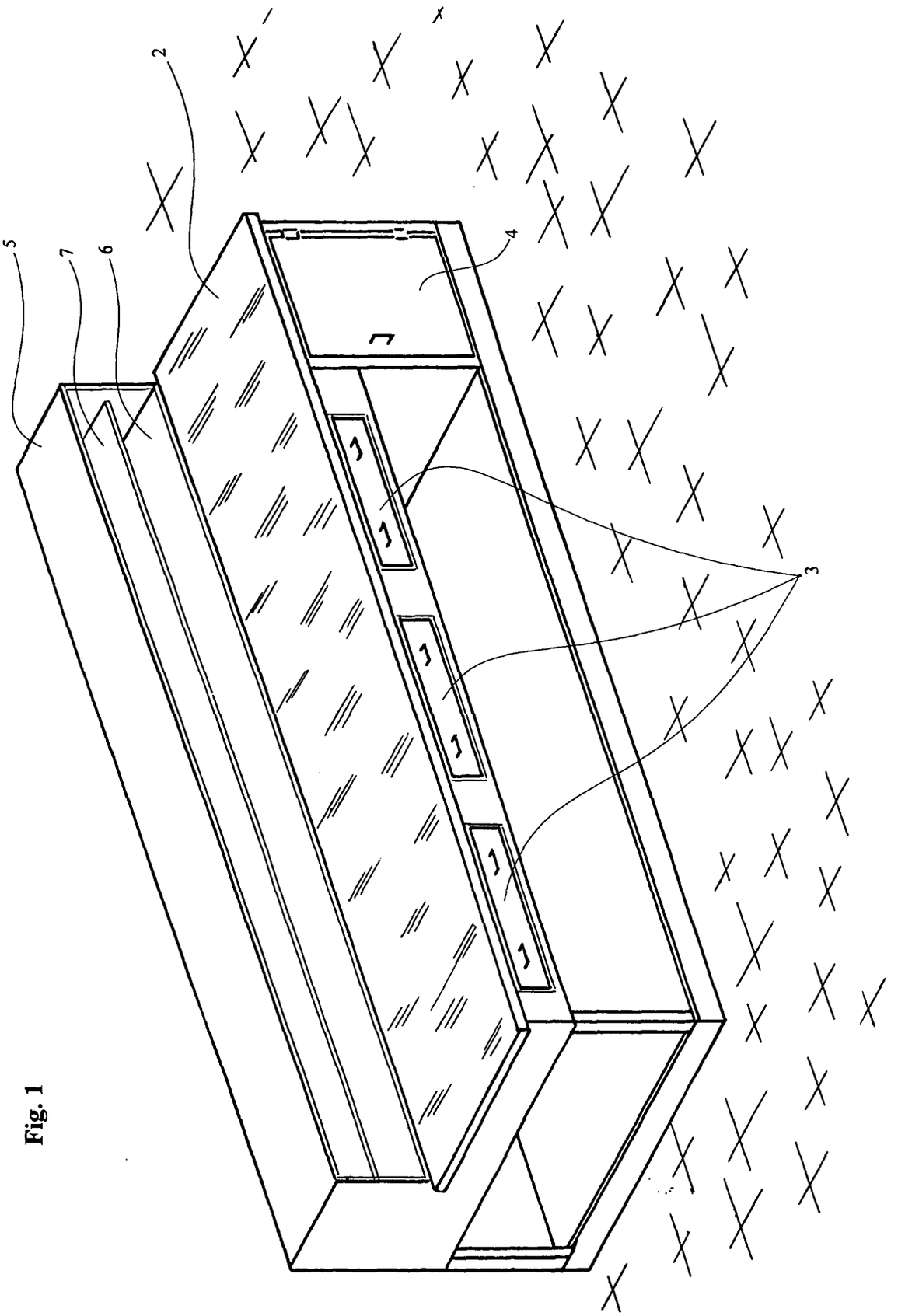


Fig. 1

Fig. 2

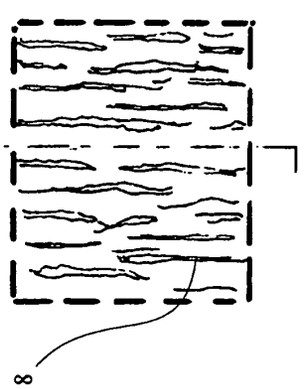


Fig. 3

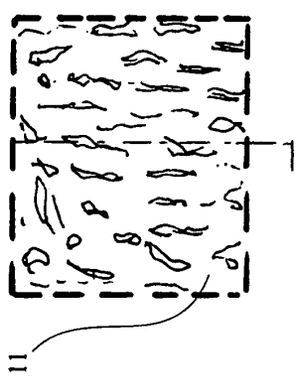


Fig. 4

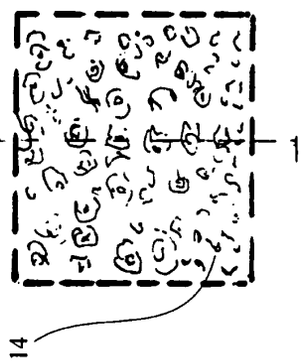


Fig. 5

Fig. 2'

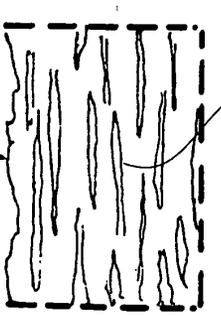


Fig. 3'

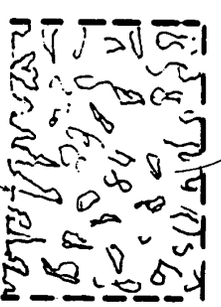


Fig. 4'

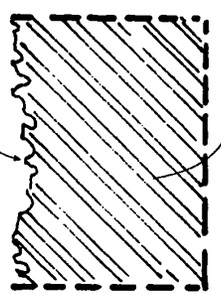
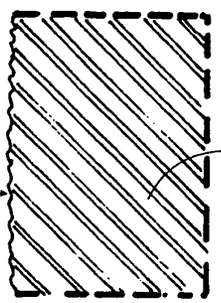


Fig. 5'



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EUROPEAN SEARCH REPORT

Application Number
EP 04 01 3543

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 4 761 931 A (SCHRUNK THOMAS R) 9 August 1988 (1988-08-09) * column 2, line 12 - line 18 * * figures *	1-5	A47B77/02 A47B96/18 A21C11/00
Y		6,7	
Y	US 6 471 880 B1 (BESSOLES YVES ET AL) 29 October 2002 (2002-10-29) * column 1, line 12 - line 31 *	6,7	
X	GB 458 115 A (HAKAN STERNER) 14 December 1936 (1936-12-14) * the whole document *	1,6	
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 07, 31 July 1997 (1997-07-31) & JP 9 084640 A (MISAWA HOMES CO LTD), 31 March 1997 (1997-03-31) * abstract *	1,6	
A	US 2 546 656 A (SMITH STANLEY S) 27 March 1951 (1951-03-27) * column 3, line 12 - line 19 * * figures *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A47B A21C C03C
A	US 2 650 552 A (WOOD FRANK T) 1 September 1953 (1953-09-01) * column 1, line 6 - line 10 * * column 5, line 64 - column 6, line 11 * * figures *	1	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	22 September 2004	Ottesen, R

CATEGORY OF CITED DOCUMENTS

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22-09-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4761931 A	09-08-1988	NONE	
US 6471880 B1	29-10-2002	FR 2809722 A1	07-12-2001
		CN 1325828 A	12-12-2001
		EP 1160213 A1	05-12-2001
GB 458115 A	14-12-1936	NONE	
JP 9084640 A	31-03-1997	NONE	
US 2546656 A	27-03-1951	NONE	
US 2650552 A	01-09-1953	NONE	

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