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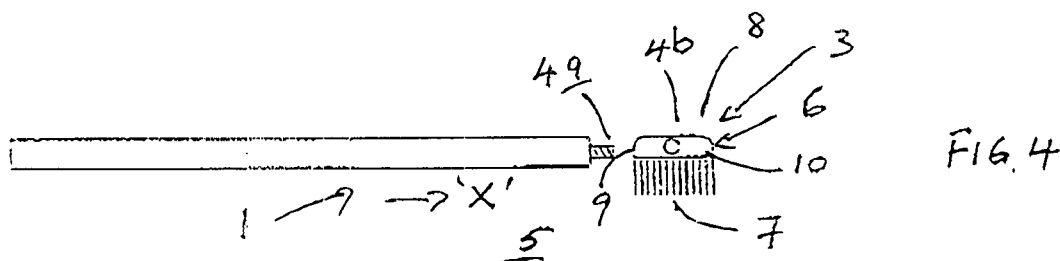
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(54) **A set of parts and an article for cleaning assembled therefrom**

(57) A kit of parts for assembly to provide a brush comprising a brush head comprising at least one brush connector, and a handle comprising at least one handle connector. The at least one handle connectors can be reversibly connected to the at least one brush connector.

tors. The at least one of the brush head and the handle provides a plurality of said connectors for connecting the brush head to the handle in a plurality of different orientational and angular disposition relative to the handle. In one embodiment the present invention provides a toothbrush assembled from the kit of parts.



Description

[0001] The present invention relates to a kit of parts and a brush assembled therefrom. In particular, the present invention relates to a kit of parts for assembling a brush for cleaning, for example a toothbrush.

[0002] Conventional toothbrushes comprises a handle and a brush head. The handle and the brush head are essentially aligned along a longitudinal axis of the brush. It is therefore difficult for the user to clean his teeth thoroughly as it is difficult for the user to manipulate the handle of the brush so that the brush head can reach all of the teeth. This difficulty in cleaning teeth thoroughly can lead to the formation of plaque, poor oral hygiene and the overall deterioration of teeth. This in turn puts extra strain on Government Health Services to provide additional dental care.

[0003] Accordingly, in a first aspect of the invention there is provided a kit of parts for assembly to provide a brush, comprising:

- a. a brush head comprising at least one brush connector, and
- b. a handle comprising at least one handle connector,

in which the at least one handle connector can be reversibly connected to the at least one brush connector, and in which at least one of the brush head and the handle comprises a plurality of said connectors for connecting the brush head to the handle in a plurality of different positions relative to the handle.

[0004] Preferably, the brush head comprises a plurality of brush connectors. Preferably, the brush head comprises at least two brush connectors, more preferably at least three brush connectors, for example at least four brush connectors. Preferably, the handle comprises one handle connector, more preferably the handle comprises two handle connectors.

[0005] Preferably, the handle connector of the handle is received within one of the brush connectors of the brush head. Preferably, the brush connector is received within the handle connector of the handle.

[0006] The present invention may provide a brush having a relatively simple construction. Preferably, at least one of the brush connectors and handle connectors comprises a screw thread.

[0007] The at least one brush connectors or the at least one handle connectors may comprise a screw threaded fastener. Preferably, the at least one handle connectors or the at least one brush connectors comprises a complementary screw threaded socket. Preferably, the handle connectors comprise a screw threaded fastener and the brush connectors provide a screw threaded socket. Preferably the brush connectors comprise a screw threaded fastener and the handle connectors provide a screw threaded socket.

[0008] Preferably, the brush assembly of the present

invention can be assembled so that the brush head can be arranged to be in at least two, more preferably at least three, for example four different orientations or angular dispositions relative to the handle.

[0009] Preferably, the screw headed fastener extends from either the handle or the brush head. Preferably, the other of the brush head or handle provides a complementary screw headed socket. The present invention has the advantage that the screw threaded fastener can be inserted directly into the complementary screw threaded socket of either the brush head and the handle. Preferably, the screw threaded fastener extends from the handle. Preferably, the screw threaded fastener of the handle is inserted directly into the screw threaded socket of the brush head.

[0010] The handle connector can be formed during the molding of the handle or formed thereafter. The brush connector can be formed during the molding of the brush head or thereafter.

[0011] Preferably, the brush head is a tooth brush head. Preferably, the kit of parts is assembled to form a toothbrush.

[0012] The present invention therefore provides a kit of parts which can be assembled to form a brush in which the handle and the brush head are connected to each other in a plurality of different ways. The brush head can therefore extend from the handle in a plurality of different orientations and positions relative to the handle. The present invention has the advantage that the kit can assembly a multi-way or multi-purpose brush.

[0013] The present invention has the advantage that the brush assembly can be used to access the teeth more effectively and clean the teeth more thoroughly. During use, the user can remove the toothbrush head from its first position relative to the handle and re-assemble the brush assembly so that the toothbrush head is in a different orientation relative to the handle so as to be able to access the teeth more easily.

[0014] Preferably, the brush head, for example a toothbrush head comprises a brush body which is a substantially rectangular parallelepiped, ovoid or elongate. Preferably, the brush head comprises a brush body having two longitudinal surfaces, two lateral surfaces, an upper surface and a lower surface. Preferably, a plurality of cleaning bristles extend from the lower surface of the brush body.

[0015] Preferably, the brush head provides at least one brush connector in at least one of the longitudinal surfaces. Preferably, the brush head provides at least one brush connector in the upper surface. Preferably, the brush head provides at least one brush connector is at least one of the lateral surfaces.

[0016] Preferably, the brush head provides at least one brush connector in at least one of the longitudinal surfaces and in the upper surface.

[0017] Preferably, the brush head provides at least one brush connector in at least one of the lateral surfaces and in the upper surface.

[0018] Preferably, the brush head provides at least one brush connector in at least one of the lateral surfaces and in at least one of the longitudinal surfaces.

[0019] Preferably the brush head provides at least one brush connector in both of the longitudinal surfaces.

[0020] Preferably the brush head provides at least one brush connector in both of the lateral surfaces.

[0021] Preferably, the brush head provides at least one brush connector in each of at least one of the longitudinal surfaces, at least one of the lateral surfaces and in the upper surface.

[0022] Preferably, the brush head provides at least one brush connector in each longitudinal surface, each lateral surface and the upper surface of the brush head.

[0023] As the brush head of the kit of the present invention provides at least one brush connector on one or more different surfaces of the brush head the present invention has the advantage that the toothbrush can be assembled in a variety of different positions and/or orientations.

[0024] Preferably the handle is composed of plastic. Preferably, the brush head is composed of plastic. Preferably, the handle and the brush head are composed of plastic. The present invention has the advantage that the brush assembly is composed of a relatively inexpensive to manufacture.

[0025] Preferably, the brush head connectors are integrally formed with the brush head. Preferably, the handle connectors are integrally formed with the handle. Preferably, the brush head connectors and the handle connectors are integrally formed with the brush head and the handle respectively.

[0026] According to a second aspect of the invention there is provided a brush which is assembled from the kit of parts as hereinbefore defined.

[0027] Embodiments of the present invention are now discussed in a non-limitative sense with reference to the accompanying drawings, of which:

Figures 1, 2, 13 and 14 are side views of the brush head of the present invention;

Figures 3, 9, 10, 11, 12 and 15 are views from above of the brush which is assembled from the kit of parts of the present invention;

Figures 4, 6, 16 and 18 are side views of the brush which is assembled from the kit of parts of the present invention;

Figures 5 and 17 are views from below the brush which is assembled from the kit of parts of the present invention;

Figure 7 is a view from above of the brush head of the present invention;

Figure 8 is a view from below of the brush head of the present invention.

[0028] Referring to the Figures, there is shown a kit of parts 1 of the present invention which can be assembled to provide a brush assembly, for example a toothbrush.

The kit of parts 1 comprises a handle 2 and a brush head 3. The handle 3 comprises a handle connector 4a. The handle 2 is an elongate member.

[0029] The brush head 3 comprises a brush body which is a rectangular block. The brush body of the brush head 3 has two longitudinal surfaces 6, a lower surface from which cleaning bristles (7) extend, two lateral surfaces 8 and an upper surface 9. The brush head provides three brush connectors 4b. One brush connector 4b is provided in the upper surface 9 of the brush body of the brush head 3. The second brush connector 4b is provided in one of the longitudinal surfaces 6 of the brush body of the brush head 3. The third brush connector 4b is provided in one of the lateral surfaces 8 of the brush body of the brush head 3.

[0030] The handle connector 4a extends from the handle 2. The brush connector 4b is an opening provided in the brush head 3. The handle connector 4a is received within the brush connector 4b.

[0031] The handle connector 4a is a screw threaded spigot. The brush connector 4b provides a complementary screw threaded socket into which the handle connector 4a is received. The brush assembly is formed by screw-engagement of the screw threaded fastener 4a and the screw threaded socket 4b in the direction of arrow 'X'.

[0032] The handle connector 4a and the brush connector 4b are releasable connectable. Connection of the brush head 3 to the handle 2 provides a toothbrush 5.

[0033] The handle 2 is composed of moulded polymeric material. The brush head 3 is also composed of moulded polymeric material. The cleaning bristles 7 can be formed integrally with the body of the brush head.

[0034] Figures 3 to 6, 9 to 12 and 15 to 18 show a plurality of different relative positions and orientations of the brush head 3 relative to the handle 2 of the brush assembly.

[0035] In Figures 3 to 6 the brush assembly is assembled by engaging the brush connector 4b on a longitudinal surface of the brush body of the brush head 3 with the handle connector 4a of the handle 2. The brush head 3 is at 90° to the longitudinal axis of the handle 2.

[0036] In Figures 9 to 12 the brush assembly is assembled by engaging the brush connector 4b on the upper surface of the brush body of the brush head 3 with the handle connector 4a of the handle 2. The brush head 3 is at 90° to the longitudinal axis of the handle 2.

[0037] In Figures 15 to 18 the brush assembly is assembled by engaging the brush connector 4b on a lateral surface of the brush body of the brush head 3 with the handle connector 4a of the handle 2. The brush head 3 extends along the same axis as the handle 2.

Claims

1. A kit of parts for assembly to form a brush, in which

the kit of parts comprises:

- a. a brush head comprising at least one brush connector, and
- b. a handle comprising at least one handle connector,

in which the at least one handle connectors can be reversibly connected to the at least one brush connectors, and
in which at least one of the brush head and the handle provides a plurality of said connectors for connecting the brush head to the handle in a plurality of different positions relative to the handle.

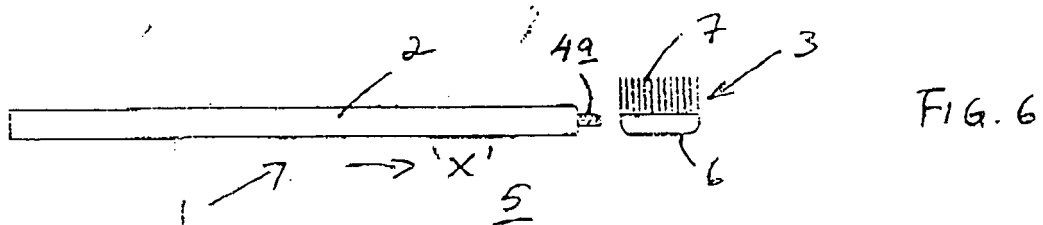
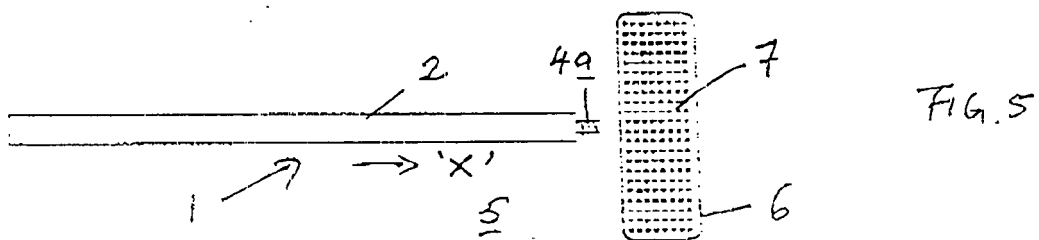
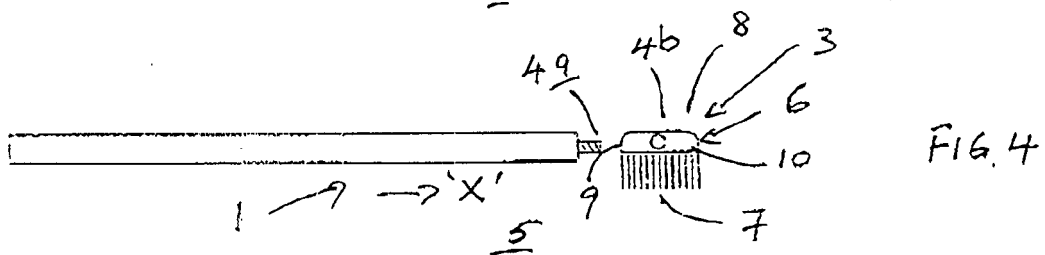
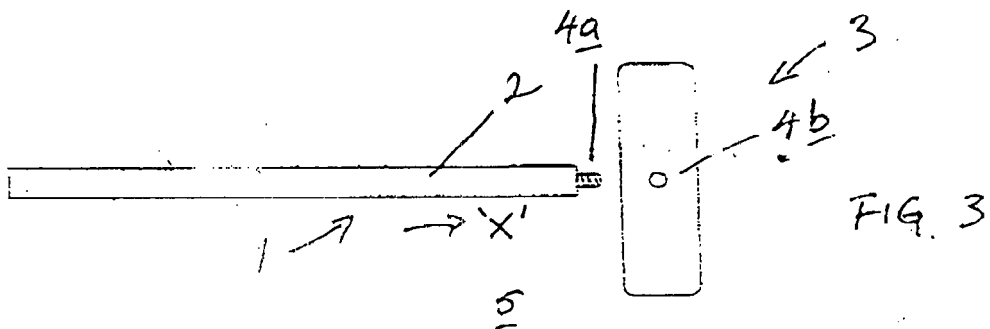
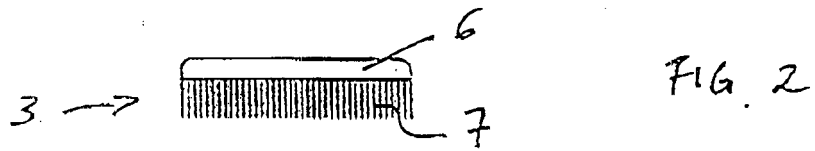
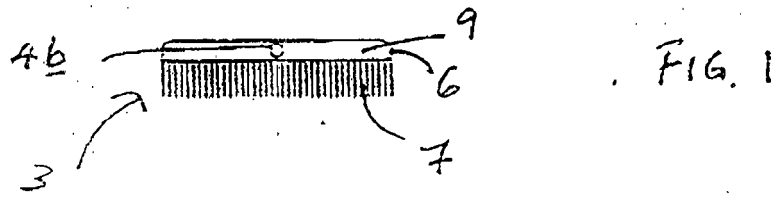
2. A kit of parts as claimed in claim 1 in which the brush head provides a plurality of brush connectors. 15
3. A kit of parts as claimed in either of claims 1 and 2 in which at least one of the connectors comprises a screw thread. 20
4. A kit of parts as claimed in claim 3 in which the at least one handle connector provided by the handle comprises a screw-threaded fastener and the at least one brush connector provided by the brush head comprises a complementary screw threaded socket. 25
5. A kit of parts as claimed in claim 4 in which the screw-headed fastener extends from the handle. 30
6. A kit of parts as claimed in any one of claims 1 to 5 in which the brush head is a toothbrush head. 35
7. A kit of parts as claimed in any one of claims 1 to 6 in which the brush head comprises a brush body having two longitudinal surfaces, two lateral surfaces, an upper surface and a lower surface which form a substantially rectangular parallelepiped body and in which the brush body provides at least one brush connector in at least one of the longitudinal surfaces and in the upper surface of the brush body. 40
8. A kit of parts as claimed in claim 7 in which the brush body provides at least one brush connector in the upper surface, in at least one of the longitudinal surfaces and in at least one of the lateral surfaces. 45
9. A kit of parts as claimed in claim 7 in which the brush body provides at least one brush connector in the two longitudinal surfaces, in the two lateral surfaces and in the upper surface of the brush body. 50
10. A kit of parts as claimed in any one of claims 1 to 9 in which the handle and the brush head are composed of plastic. 55

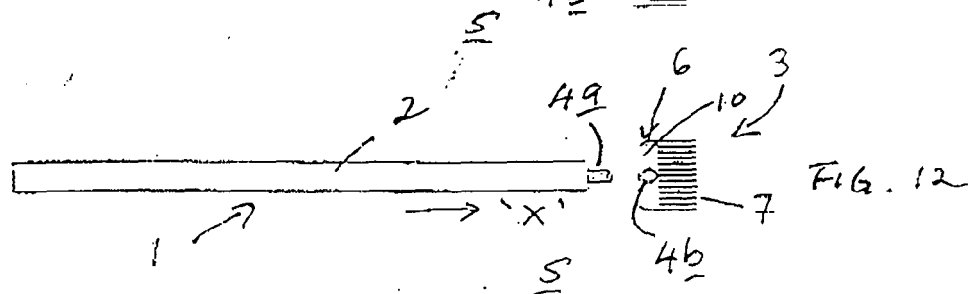
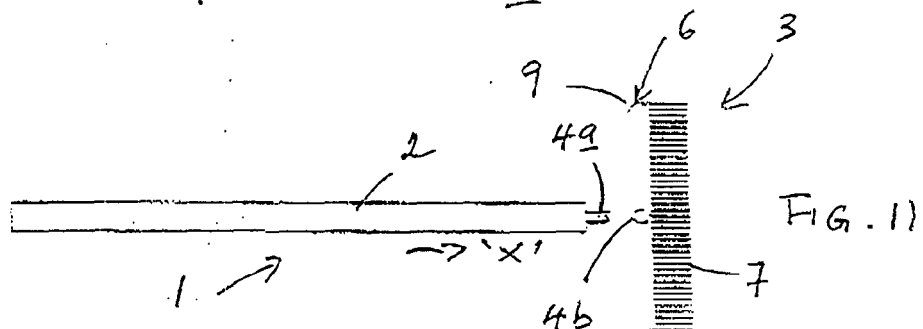
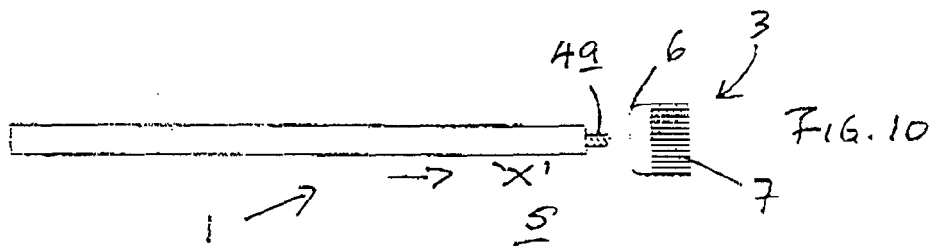
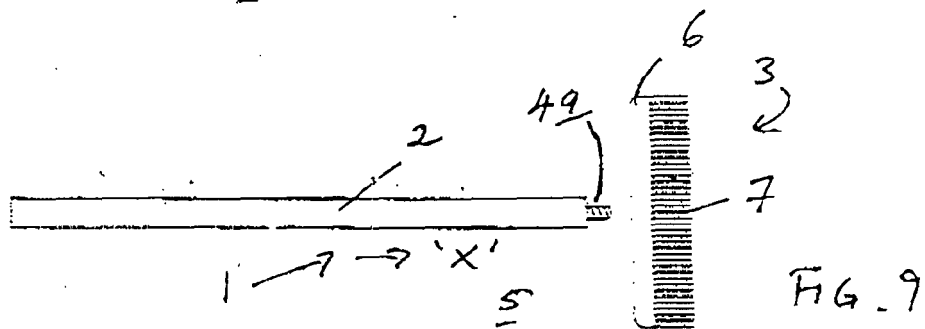
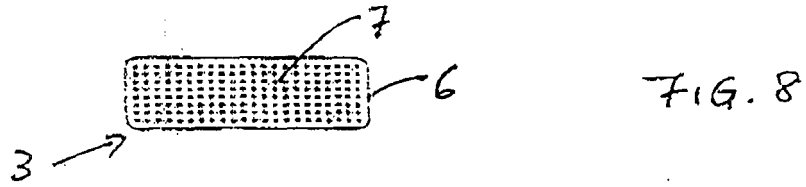
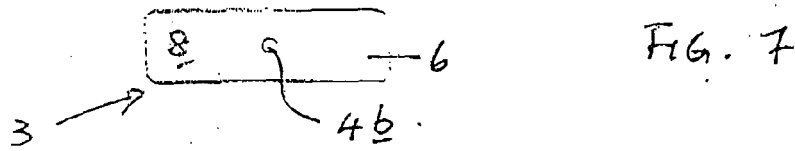
11. A kit of parts as claimed in any one of claims 1 to 10 in which the at least one brush connector is integrally formed in the brush head.

12. A kit of parts as claimed in any one of claims 1 to 11 in which the at least one handle connector is integrally formed in the handle.

13. A brush which is assembled from the kit of parts as claimed in any one of claims 1 to 12.

14. A toothbrush which is assembled from the kit of parts as claimed in any one of claims 1 to 12.





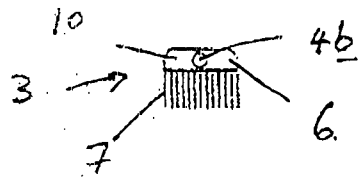


FIG. 13

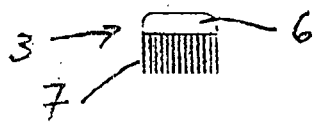


FIG. 14

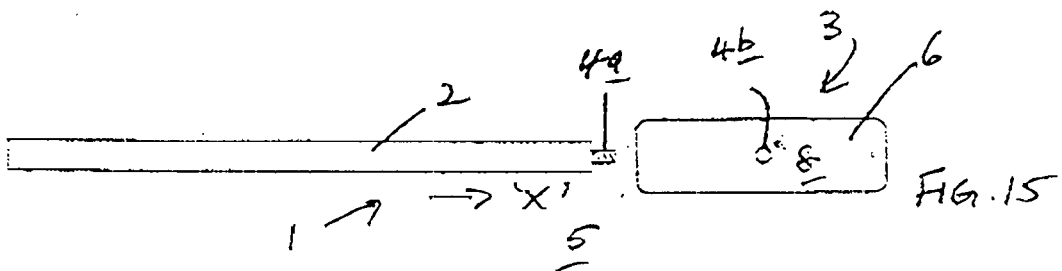


FIG. 15

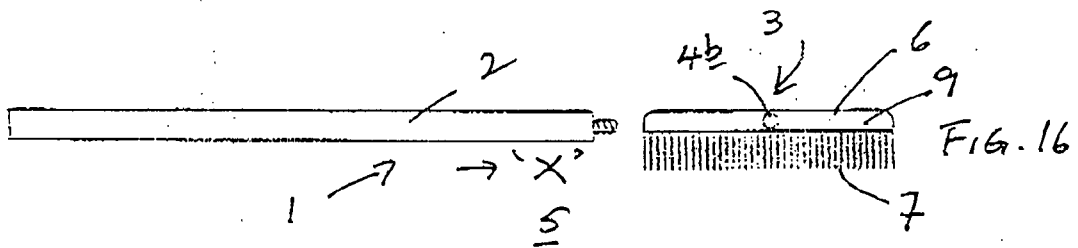


FIG. 16

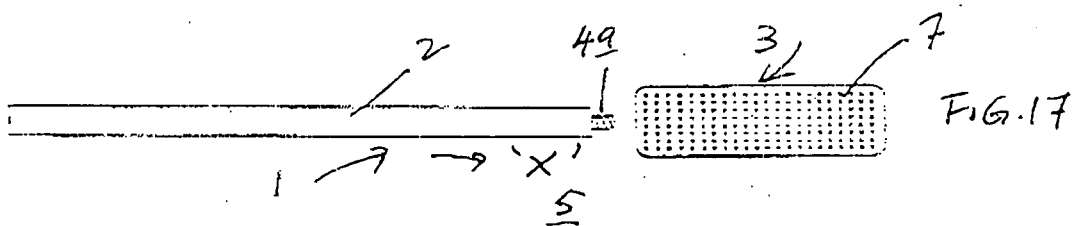


FIG. 17

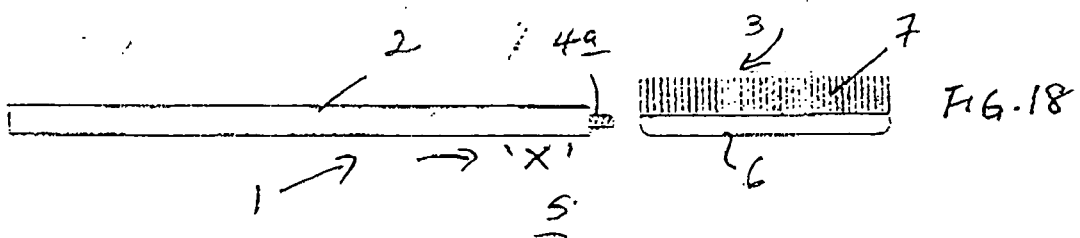


FIG. 18



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 01 6559

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	FR 1 151 411 A (ERRIEN FRERES) 30 January 1958 (1958-01-30)	1-5,10, 13	A46B7/04 A46B5/00
Y	* the whole document *	6,11,12, 14	
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A	* the whole document *	1,3-5,13	
X	----- US 2 705 336 A (WILSON LUDWIG) 5 April 1955 (1955-04-05)	1-5, 11-13	
Y	* the whole document *	6,10,14	
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A	* the whole document *	1,3-5,13	
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	* the whole document *		

			TECHNICAL FIELDS SEARCHED (IPC)
			A46B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		21 February 2006	Triantaphillou, P
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.**

EP 05 01 6559

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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21-02-2006

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