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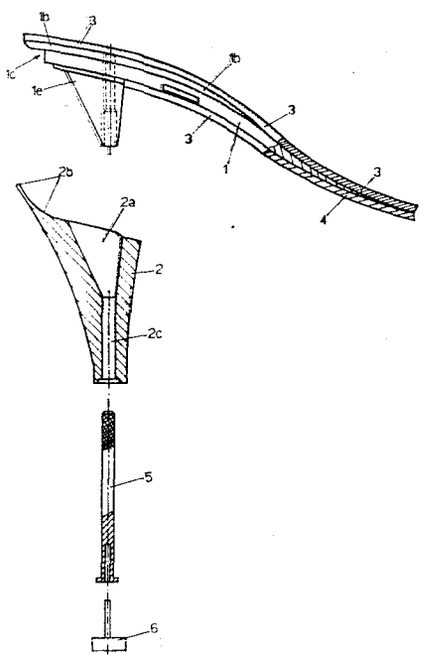
(54) Woman's sandal of quick and easy assembly.

(57) The instant invention relates to a woman's sandal of good quality but which may be economically manufactured as it is made up of simple, premoulded parts which are quickly and easily put together without the need for specialized machinery or skilled labour.

The rapidity and ease with which the herein described sandal is assembled is due to the fact that a rigid platic insert (1) is applied under the insole (3) and this serves both to support and centre the heel (2) which is held in place by a pin (5) which, under pressure, is threaded through the top piece (6) and heel (2) until it fits into an appropriately holed heel-shaped protusion (1e) found on the under side of the aforesaid rigid insert (1).



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Woman's sandal of quick and easy assembly.

This Application for Industrial Patent has for its object to provide a woman's sandal of good quality but which may be economically manufactured as it is made up of simple, pre-moulded parts which are quickly and easily put together without the need for specialized machinery or skilled labour.

In order to better illustrate the advantages and the originality of this sandal some mention should be made of the various stages involved in the assembly of an ordinary sandal.

We shall presume we have an insole of pressed board, or of any other similar synthetic material, which has been suitably bound, i.e. covered on the upper side by a peripheral band which is tucked under the edge of the insole.

According to the most usual method, the upper which, in practice, consists of cross bands or strips generally arranged at the forepart of the foot, is applied to this insole.

The upper is folded under the insole and usually cemented into position, then the actual sole is applied to the insole and the heel fitted and centred with the use of the appropriate machinery.

The work is completed with the application of a thin finishing inner sole to the insole to cover and hide the heads of the nails which hold the heel in place.

The most delicate stages are undoubtedly the centring and fixing of the heel which require highly skilled labour and specialized machinery.

These operations are, however, greatly simplified when working with the herein described sandal as will become apparent in the following statement.

The rapidity and ease with which the herein described sandal is put together is due to the fact that a rigid plastic insert is applied under the insole and this serves both to support and centre the heel, which is held in place by a pin which, under pressure, is threaded through the top piece and heel until it fits into an appropriately holed heel-shaped protrusion found on the underside of the aforesaid rigid insert.

Thus, on the one hand the delicate stage of centring the heel has been eliminated as it centres itself and, on the other hand, the thin finishing inner sole is no longer necessary as the insole it covers is now not nailed to the heel underneath.

The accompanying drawings are for a clearer illustration and exemplify only one preferred embodiment of the instant invention wherein:

- fig. 1 is a top view, in plan, of the aforesaid rigid insert;
- fig. 2 is a bottom view, in plan, of the aforesaid rigid insert;
- fig. 3 is a cross-section of the rigid insert with the longitudinal plane A-A of. fig. 2;
- fig. 4 is an enlarged side view of the sandal according to the herein described invention.

With reference to figures 1, 2, 3, the rigid insert (1) i.e. the metal core usually found in the insole, is moulded in plastic and has exactly the same shape as the insole above it, to which it is fixed either by a normal cementing process or by injecting the plastic directly under the insole, appropriately arranged inside the mould.

At the front this insert (1) gradually tapers away from the edge of the insole, getting thinner and narrower, and finishes in a central tongue (1a), where the arch of the foot stops.

This narrowing is essential in order to leave space under the insole where the upper will be folded and fixed, so that no bulk is formed

between the rigid insert and the sole itself which is applied under the insert (1) and insole.

The rigid insert (1) is characterized by a thinner than usual peripheral band (1b), under which the edges of the material or leather used in the aforesaid binding operation are folded and fixed.

It should be noted that this peripheral band (1b) on its under side is flat and not curved so as to create an almost straight step on the sole of the insert (1).

A series of closed holes are provided along the underside of this band (1d), which catch and hold the filiform adhesive which is generally used with automatic binding machines.

Finally, at the back of the rigid insert (1) is a protrusion (1e), tapering towards the bottom and looking like a small heel, on to which the actual heel is fitted.

This heel has a cavity (2a) exactly the same shape as the heel-shaped protrusion (1e).

This heel-shaped protrusion is crossed axially by an absolutely vertical hole (1f), characterized by the fact that the diameter of its lower section is larger than that of its upper section.

With reference to figure 4 we shall now describe the various stages in the assembly of the herein described sandal.

Once the insert (1) has beed fixed under the insole (3), either by cementing or by the direct injection of the insert under the insole as already mentioned, the binding operation may be carried out using the normal automatic machines.

However, the end results are definitely better as regards the evenness and durability of the cementing process, thanks to the thinner than usual peripheral band (1b) and the series of closed holes (1d).

After having attached the upper to the sandal following the usual operations, the sole (4), which exactly matches the insole (3), is

applied.

The continuity of this sole (4) is interrupted at the point where it is fitted against the heel-shaped protrusion (1e).

On fitting the heel (2) on to the heel-shaped protrusion (1e) the transversal edge of the sole (4) is tightly enclosed between the heel (2) and insert (1), whilst the upper edge (2b) of the heel (2) is right against the bound edge of the insole (3).

As the heel-shaped protrusion (1e) is exactly the same shape as the cavity (2a) found in the actual heel (2) the centring of this heel is automatically and rapidly achieved without the need for any particular attention or skilled labour.

It should be noted that the edge (2b) of the heel slopes internally towards the centre so that on completion of the assembly space is left between the aforesaid step (1c) and the inside edge of the heel.

This space has been provided in order to accomodate the folds of the binding which otherwise would prevent a uniform and even adhesion of the parts, in fact, during the usual work process it is necessary to remove these excess folds of material or leather of the binding.

The final fixing of the heel (2) is obtained by using a knurled or serrated pin (5) which is threaded from the bottom into the heel, through the hole (2c) and into the aforementioned cavity (2a).

This pin easily penetrates the hole (2c) and the first section (1f) and only really starts gripping in the last section and that is in order to make the assembly of the sandal as quick as possible.

The top piece (6) may be driven in and under the head of the pin (5), as illustrated in the attached drawings or made in one piece with the pin itself.

According to a second preferred embodiment of the instant invention the heel-shaped protrusion (1e) instead of being tapered similar to a truncated cone, may be graduated concentrically, and so obviously

must be the cavitv (2a) of the heel (2).

This second arrangement in fact, guarantees a steadier and more secure centring as even if the heel, for some reason, should not be properlv and firmlv fitted to the heel-shaped protrusion (1e) the contact between the matching surfaces is not lost.

It should be clear that this specification refers to one preferred embodiment of the sandal according to this invention, thus numerous variations and modifications, above all concerning the structural details, may be carried out by experts without changing the aim of the invention.

It should also be clear that this rigid insert (1) may be used when manufacturing other tvpes of footwear, not necessarily sandals, and still have a quicker and more simplified assembly of the parts since the centring and fixing operations of the heel are eliminated in exactly the same way and therefore there is no longer need for the finishing inner sole to hide the nails which fix the heel to the sole.

Claims

1) Woman's sandal of quick and easy assembly, characterized by a plastic rigid insert fitted under the insole, at the back of which is a small heel-shaped protrusion which serves both to support and centre the actual heel. The heel has a cavity exactly the same shape as the aforesaid heel-shaped protrusion thus the centring of the heel is automatically achieved by fixing it to the heel-shaped protrusion, it is then held in place by a pin which, under pressure, is threaded from the bottom through the heel until it fits into a hole provided inside the heel--shaped protrusion.

2) Woman's sandal of quick and easy assembly, according to claim 1) and characterized by a rigid insert which is of exactly the same shape as the insole above it, from which it gradually tapers, getting thinner and narrower, and finishes where the arch of the foot stops.

3) Woman's sandal of quick and easy assembly, according to claim 1), using a rigid insert, and characterized by a thinner than usual peripheral band with a flat, uncurved underside, so as to create an almost straight step on the sole of the aforementioned rigid insert.

4) Woman's sandal of quick and easy assembly, according to claim 1), using a rigid insert, and characterized by a series of closed holes provided along the under side of the aforesaid peripheral band.

5) Woman's sandal of quick and easy assembly, according to claim 1), using a rigid insert, and characterized by a heel-shaped protrusion as in claim 1), which is axially crossed by an absolutely vertical hole with the diameter of its lower section larger than that of its upper section.

6) Woman's sandal of quick and easy assembly, according to claim 1), and characterized by the fact that the upper edge of the heel slopes internally towards the centre, sloping towards the aforesaid central cavity and ending inside a hole which axially crosses the heel and where the aforesaid fixing pin is threaded.

7)Woman's sandal of quick and easy assembly, according to claim 1), and characterized by the heel-shaped protrusion as in claim 1) which instead of being tapered similar to a truncated cone may be, according to a second preferred arrangement, graduated concentrically, and so obviously must be the cavity provided in the heel.

8) Woman's sandal of quick and easy assembly, according to claim 1), and characterized by the aforementioned knurled or serrated pin which is threaded into the heel and into the first section of the axial hole of the aforesaid heel-shaped protrusion. It only starts gripping in the last section of this axial hole as the possibility has been allowed for the top piece to be incorporated into the pin head or for the top piece to be made in one piece with the pin.

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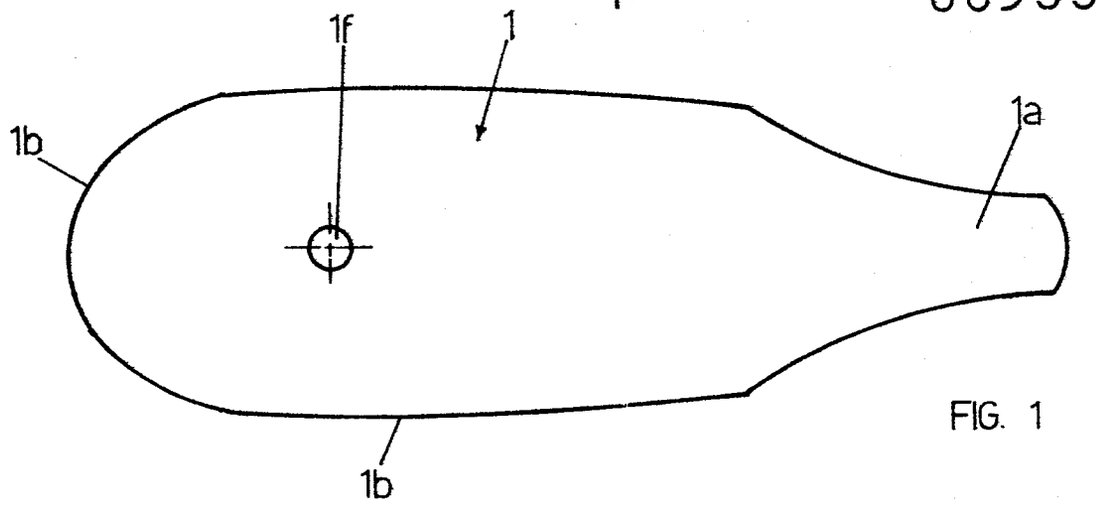

FIG. 1

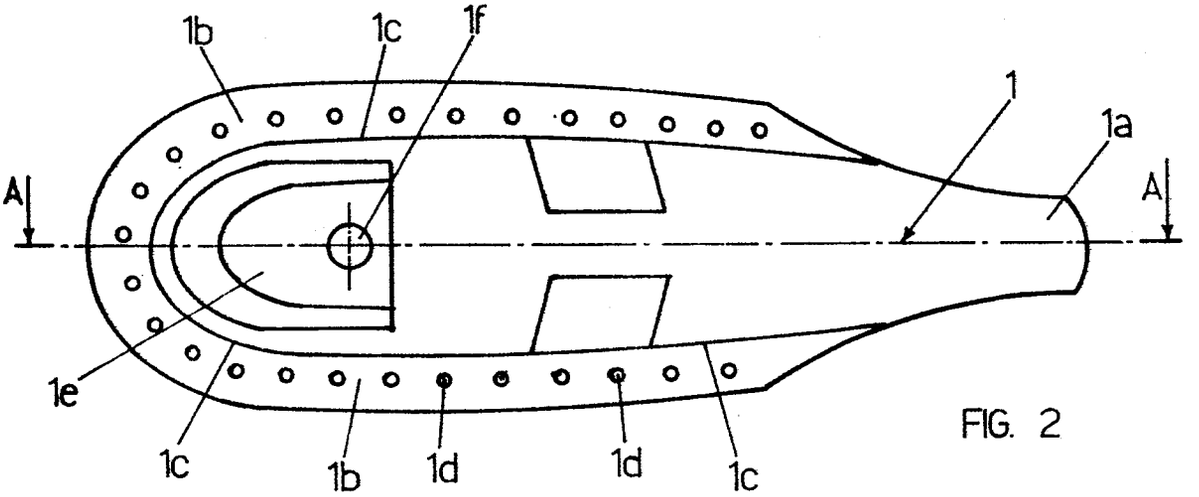

FIG. 2

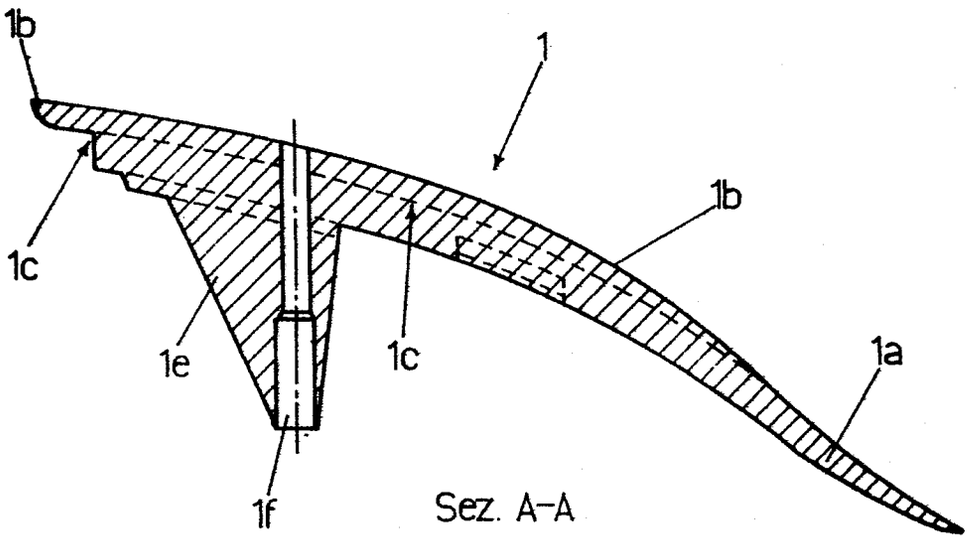

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FIG. 3

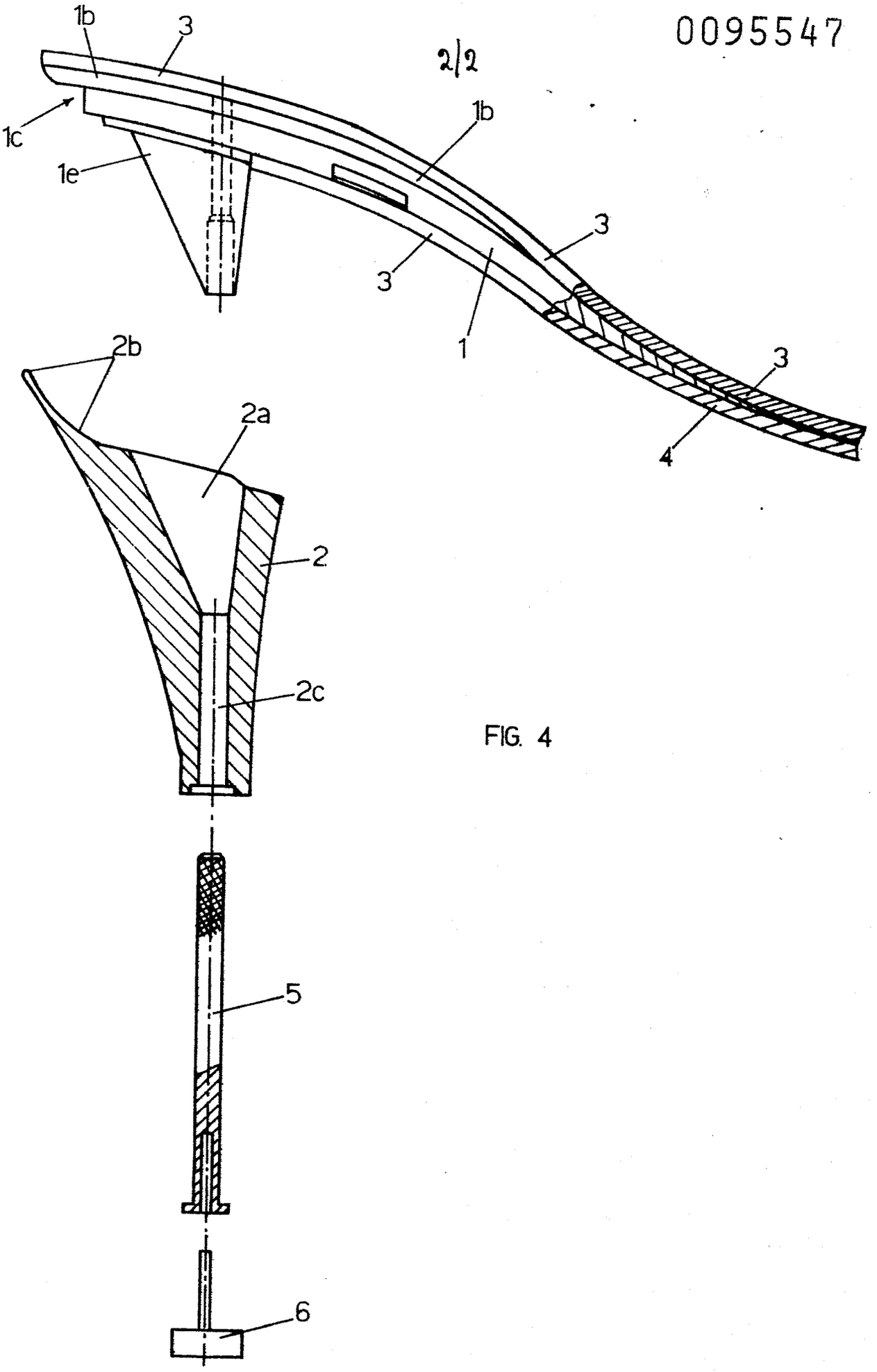

FIG. 4

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EUROPEAN SEARCH REPORT

Application number 0095547

EP 82 83 0283

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. ³)
X,Y	US-A-1 344 356 (F. SAHR) * Page 1, lines 82-108; figures 1-4 *	1,4-6	A 43 B 13/28 A 43 B 23/22
X,Y	US-A-2 852 866 (J.P. QUIRK) * Page 1, right-hand column, lines 39-64; figures 1-7 *	1,5,6,8	
Y	US-A-2 176 684 (J.P. QUIRK) * Page 2, left-hand column, lines 49-73; figures 7,8 *	1,5,6	
X	BE-A- 680 619 (A. SAUER) * Figure 2 *	2	
Y	FR-A-1 346 537 (C. ABELLONIO et al.) * Figures 1,2 *	6,7	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) A 43 B
Y	US-A-2 879 610 (J. DI GAETANO) * Figures 1-4 *	6,7	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12-07-1983	MALIC K.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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