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(54) Personalized sectioned sole

(57) The finding relates to the production of square-toed ballet shoes and namely the arch support therefor. The problem is the deformation and the next definitive break of the arch support upon getting up on point because of the lack of bending elasticity of the materials. Such problem is due to the use of arch supports of pressed board that deteriorate with the continuous arching of the foot and do not ensure a steady, constant inclination of the foot over a maximum of eight dancing lessons. The solution consists of an arch support made of soft synthetic material formed of a smooth upper portion and a lower portion consisting of five sections having two bevelled sides that ensure a fixed, constant inclination upon arching the foot.

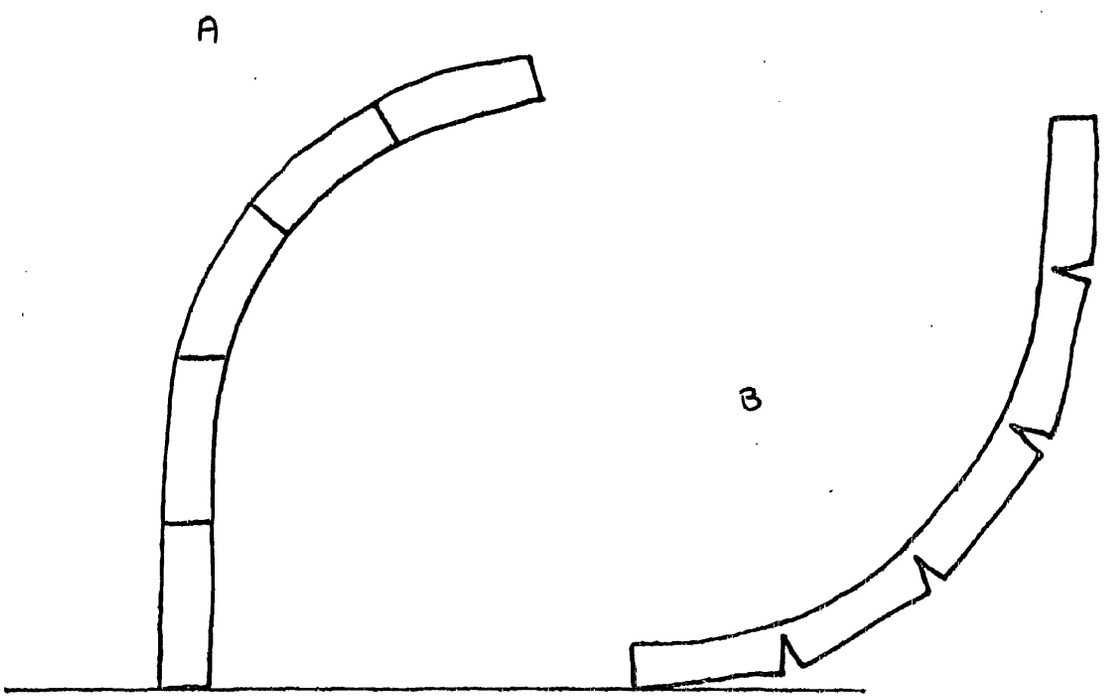

FIG. 3

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Description

[0001] This invention has been conceived and developed especially for the production of square-toed ballet shoes and namely the focal portion of the shoes: the arch support.

[0002] The design is due to a direct, ten-year experience of the Applicant in the ballet world. In fact, interviewed ballet dancers complain of duration and stability of the ballet cornerstone: the point.

[0003] The products already existing on the market suffer from problems not yet solved by the manufacturers concerned. The main problems is the short duration and stability of the inclination of the arch support as the materials employed for the manufacture of the latter undergo a fast wear estimated about eight lessons distributed in two weeks.

[0004] The materials employed traditionally for the construction of the arch support (point) of the ballet shoes presently on the market are:

- pressed board,
- pressed board reinforced by a thin leaf of hard plastic,
- double pressed board,

such board having a maximum thickness of 1,5 cm.

[0005] Further products having arch supports of different manufacture can be found on the market, all of them aiming at improving the product and consisting of:

- a double layer of pressed board with a very thin steel lead in the middle,
- an arch support completely made of rope,
- an arch support completely made of plastic.

[0006] The materials for the manufacture of the arch support could be a lot and all different from one another, however, the materials mentioned above are used to allow the arch support of the ballet shoes to execute the two main movements of dancing, i.e. inside and outside arching of the feet, thus causing the arch support to be subjected to continuos bending and to support an amount of the body weight (see Fig. 1/4). It is important to emphasize that the two types of arching, and consequently the two types of arching of a ballet shoe, i.e. the quick change from half-point to on point, are executed several hundred times (see Fig. 1/4).

[0007] Accordingly, the very fast wear of the arch support is self-evident as the materials yield gradually until the complete collapse.

[0008] Additionally, it should be appreciated that the arch support presently on the market does not fulfil the primary technical requirement of a ballet dancer because of the arch support manufacturing method and the materials used. In fact, in order to dance under the best conditions the ballet dancer needs that the arching degree of her arch supports, corresponding to the maximum arching degree of her feet, is kept steady and unchanged in time.

[0009] Such a technical need is personal and then changes for each dancer.

[0010] Another problem not yet solved is the following: when the ballet shoe is used the first time, the arch support is very stiff. Since dancing needs the two types of arching (A, B), as already mentioned, the ballet dancer must get up on point and stretch her muscles to try to make the arch supports less rigid and to obtain the needed type of arching as soon as possible. Such operation (softening) added to the unnatural position of the foot when getting up on point helps but does not cause muscle troubles in some subjects and tendinitis in others.

[0011] The logic solution for the problems above is the manufacture of an arch support made of soft synthetic material (plastic) and formed of an upper smooth portion (where the foot rests) and a lower portion formed of five sections having two inclined adjacent sides (see Fig. 2/4).

[0012] The two types of arching (A, B, see Fig. 1/4) needed by the ballet dancer are easily obtained by such arch support. Accordingly, the arching of the shaped arch support and the natural arching of the foot are also obtained (see Fig. 3/4). In fact, if a different inclination of the adjacent sides is given upon manufacturing the die of the arch support, the personalization of the arch support for each ballet dancer and the maintenance of the ideal inclination for an unlimited period of time are obtained.

[0013] With such type of arch support the problem of its wear is avoided automatically as only one body having a thickness of about 1 cm is formed when the gaps between the sections close because of the outside inclination. Thus, the arch support is made almost enduring even because most of the body weight rests on point and not on the arch support. Additionally, the inclination that does not get off the predetermined pattern is kept unchanged (see Fig. 4/4).

[0014] Furthermore, the even minimum rate of contribution to muscle and tendon troubles is suppressed as the desired inclination is achieved without stretching muscles when the square-toed shoe is new.

[0015] The arch support may have a double way of use. It may be used fixedly in the shoe and be thrown when the outside portion is worn out, or shoes and arch supports may be kept separate and the latter may be put into the former only upon using the shoes, thus allowing purchasers to achieve unquestionable economical advantages as they will always use the same arch supports and buy only the outside portion of the shoes at a very cheap price.

Claims

1. An arch support consisting of only one block which

can be made of any material having two faces, a lower face having two cuts with triangular section allowing the arch support to be inclined as desired according to their extent, and an upper smooth face.

2. The arch support of claim 1, wherein said shaped two faces may extend to the whole arch support or a portion thereof.

3. The arch support of claim 1, wherein it can be applied to any type of shoe.

4. The arch support of claim 1, wherein the shoe may be modified in order to receive the arch support, i. e. it may be kept unchanged or made slightly higher and deprived of its own arch support.

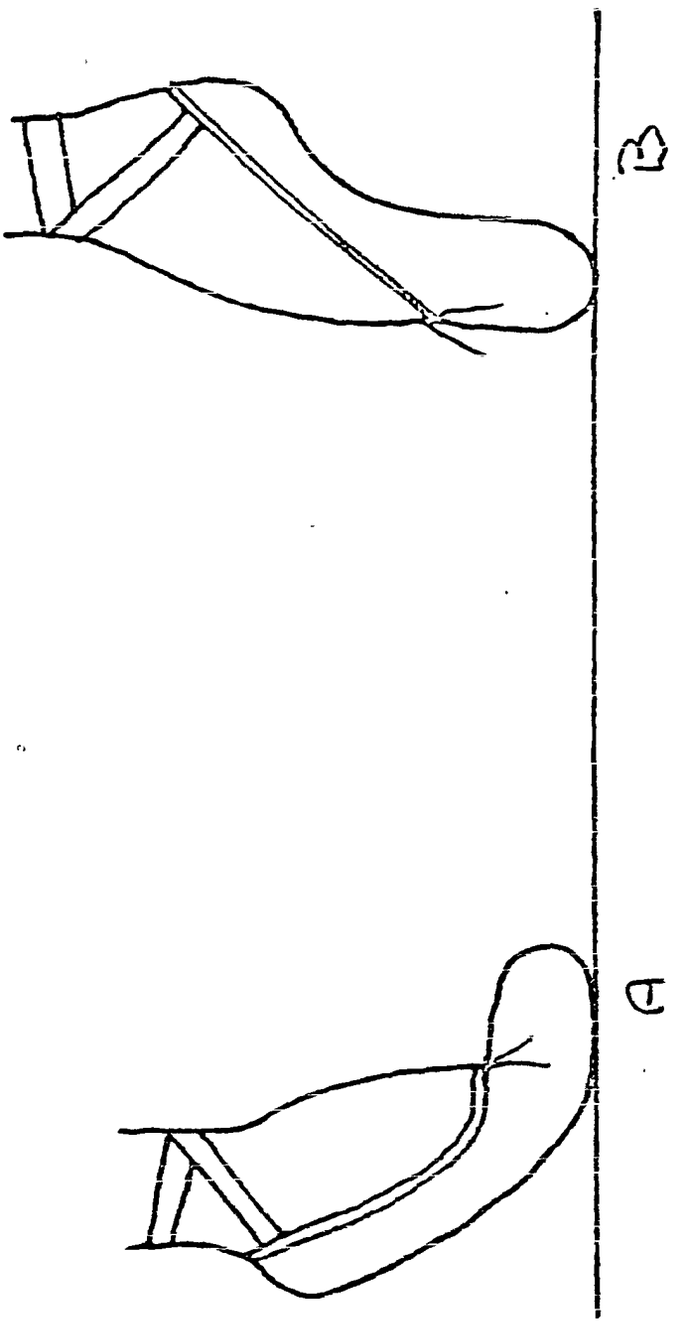

FIG. 1

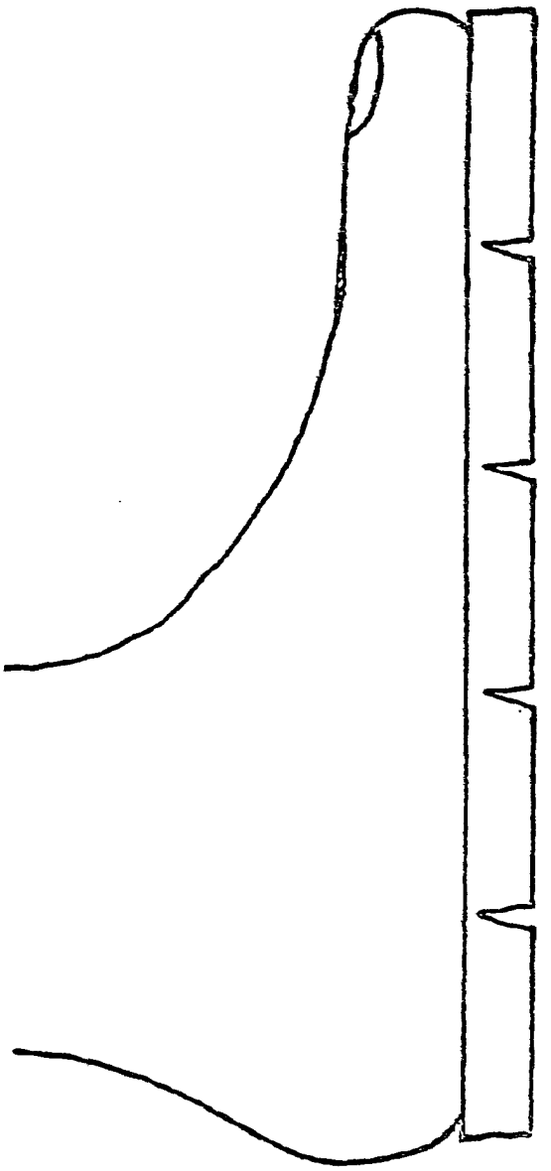

FIG. 2

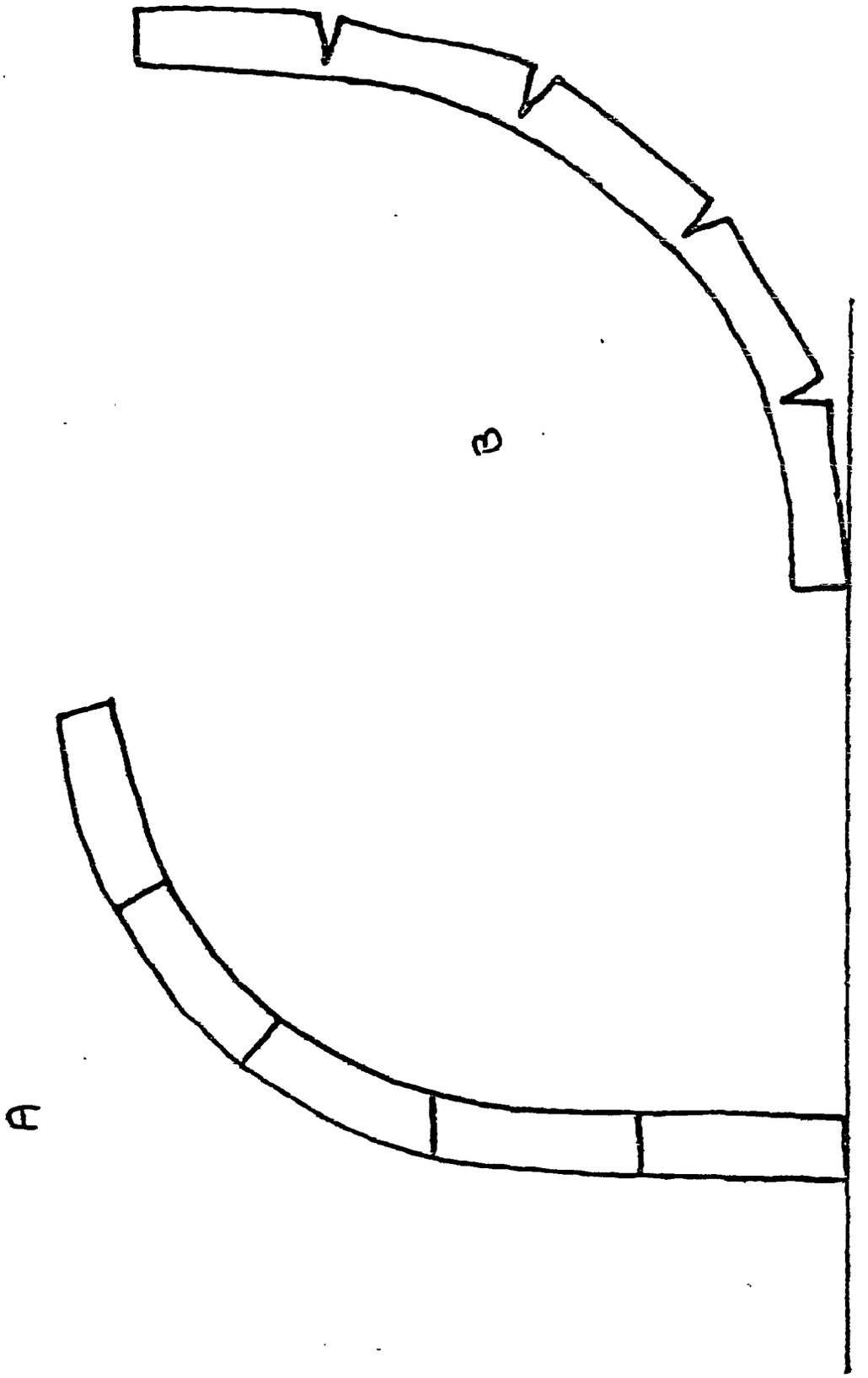

FIG. 3

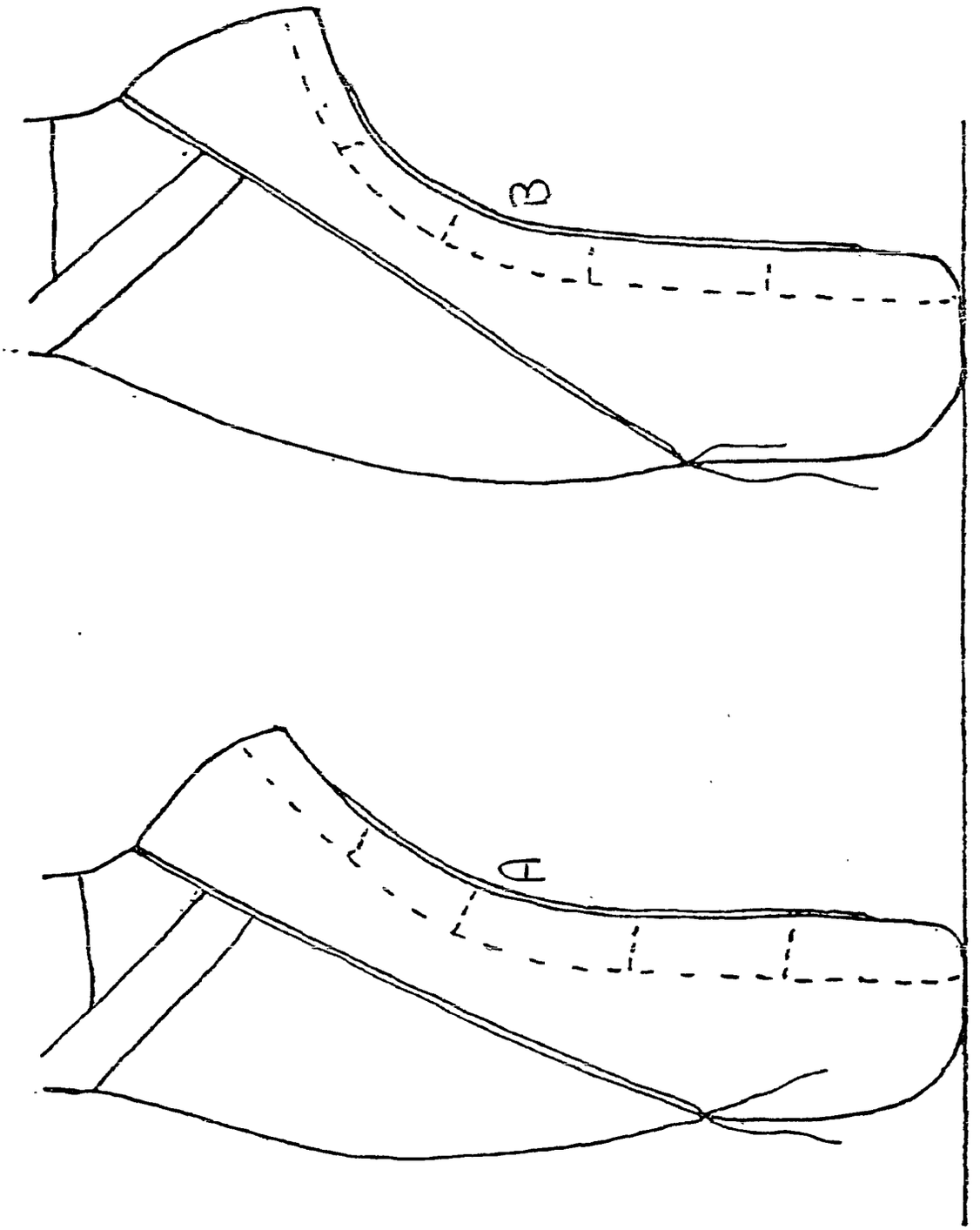

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 99 83 0676

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	GB 2 156 652 A (FREED RODNEY LESTER;GAMBA VICTOR MICHAEL) 16 October 1985 (1985-10-16) * page 1, line 107 - line 126 * * figures 4,5 *	1-4	A43B5/12 A43B17/00
A	GB 2 245 813 A (DANCING BONZAI CO) 15 January 1992 (1992-01-15) * page 5, line 10 - line 20 * * claim 1 * * figure 3 *	1,4	
A	US 4 901 453 A (GAYNOR ELIZABETH H) 20 February 1990 (1990-02-20) * abstract; figure 6 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	31 January 2000	van Elk, M

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 83 0676

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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31-01-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2156652 A	16-10-1985	AU 3821485 A	10-10-1985
		DE 3524676 A	15-01-1987
		FR 2584276 A	09-01-1987
GB 2245813 A	15-01-1992	AU 650272 B	16-06-1994
		AU 8017691 A	09-01-1992
		DE 4122701 A	23-01-1992
		FR 2664134 A	10-01-1992
		IT MI911881 A	09-01-1992
		IT MI950406 U	09-01-1992
		JP 6315401 A	15-11-1994
		JP 7063401 B	12-07-1995
		US 5220735 A	22-06-1993
US 4901453 A	20-02-1990	US 5035069 A	30-07-1991

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