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(54) Tear-off device with protection

(57) Device for tearing off one length of sheet material at a time from a sheet material wound onto a roll, such as paper, ribbon and the like, comprising a frame, a spindle for the roll which is supported by the frame, a tear-off member comprising a knife blade with a sharp edge suspended parallel to the roll, wherein the tear-off member comprises a protective strip which is arranged opposite the sharp edge of the knife blade substantially parallel thereto and at a distance therefrom. This avoids the possibility of a person performing operations in the vicinity of the device sustaining injuries.

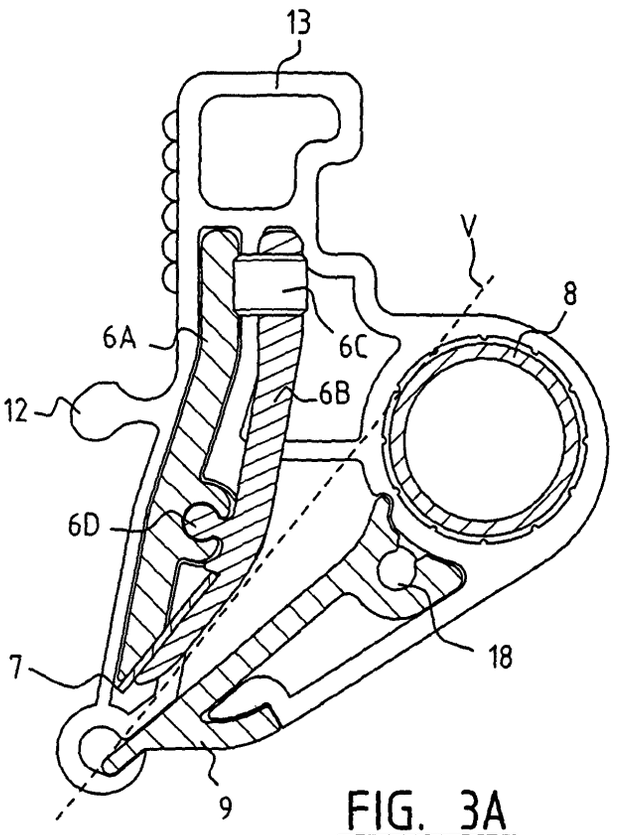

FIG. 3A

EP 1 505 027 A1

Description

[0001] The invention relates to a device for tearing off one length of sheet material at a time from a sheet material wound onto a roll, such as paper, ribbon and the like, comprising a frame, a spindle for the roll which is supported by the frame, a tear-off member comprising a knife blade with a sharp edge suspended parallel to the roll.

[0002] Such a device is for instance known from the patent NL 194079 in the name of applicant with the title "Holder for a roll of paper or the like". The device described in this patent has the drawback that while performing operations in the vicinity of the device it is easily possible for the hands to come up against the sharp cutting edge of the knife blade, and in this way sustain a cut.

[0003] The invention has for its object to improve the device as according to the preamble of claim 1 and specifically to avoid personnel using the device sustaining injuries.

[0004] To this end the device of the invention is distinguished in that the tear-off member comprises a protective strip which is arranged opposite the sharp edge of the knife blade substantially parallel thereto and at a distance therefrom.

[0005] According to a preferred embodiment of the device according to the invention, the tear-off member comprises a guide tube mounted for free rotation between the roll and the knife blade. In this way the roll can rest against the guide tube and unwinding from heavy rolls is made easier.

[0006] The guide tube is preferably arranged such that the tangent on the guide tube and the protective strip substantially corresponds with a tangent of the roll. Easy unrolling and tearing-off is hereby achieved, wherein creasing or jamming of the sheet material is avoided.

[0007] Each outer end of the spindle is preferably supported in a guide member which is connected to the frame and which inclines in the direction of the knife blade. Under the influence of its own weight the roll will hereby lie at all times against the cutting member and, in the case a guide tube is present, against the guide tube, independently of the diameter of the roll and therefore in the case of both a new and an almost finished roll.

[0008] According to a further developed embodiment of a device according to the invention, the tear-off member comprises a knife holder for the knife blade. The knife holder preferably lies at a distance from the tangent on the guide tube and the protective strip. In this way the sheet material can move smoothly from the roll to a position beyond the knife blade.

[0009] This knife holder preferably consists of a fixed strip and a push strip arranged tiltably relative to the fixed strip, between which strips the knife blade can be clamped using a spacer between the longitudinal end of the fixed strip remote from the knife blade and the push strip.

[0010] The strips of the tear-off member are preferably received at either end in each case in a profile piece, each of which can be snapped into mounting elements arranged on either side of the frame. Such a profile piece is manufactured for instance by injection moulding and is generally provided with a number of chambers into which the outer ends of the different strips can be received.

[0011] The present invention will be further elucidated on the basis of the annexed figures and the figure description following hereinbelow of a non-limitative exemplary embodiment of the invention. In the drawing:

fig. 1 is a perspective view of a device according to the present invention provided with a roll of sheet material;
fig. 2 is a perspective view of a profile piece 5 mounted in a mounting element 4;
fig. 3A and B are respectively a front view and a perspective view of the profile piece of figure 2 in which a knife holder with knife blade, a guide tube and protective strip are arranged.

[0012] The device consists of a joint frame, comprising a rectangular bracket 1. The bracket is provided with supports 2 enabling the bracket to be held vertical. The bracket and the supports can of course take a different form, and we refer to the earlier patents NL 194.079, EP 0419735 for other possible embodiments, many more variants of which will of course be obvious to a skilled person.

[0013] Arranged along the vertical uprights 3 of bracket 1 are mounting elements 4 which serve on the one hand to receive the roll R of random sheet material and on the other for snap-in suspension in each case of a profile piece 5 in which a knife holder 6a, 6b, 6c with knife blade 7, a guide tube 8 and a protective strip 9 are accommodated.

[0014] The roll R has a hollow core through which is passed a spindle 10. Spindle 10 has a length such that the outer ends thereof are received on a guide member in the form of a guide surface 11. This guide surface inclines downward in the direction of tear-off member S. Under the influence of the weight of the roll R itself a determined pressure of the roll periphery is hereby brought to bear against the tear-off member S, and roll R lies automatically in a suitable position against tear-off member S.

[0015] According to a variant (not shown), the incline can change along the length of the guide surface so as to regulate the pressing power against tear-off member S.

[0016] Tear-off member S comprises a blade holder 6a, 6b, 6c with knife blade 7, a guide tube 8 and a protective strip 9, which components are each received at both outer ends in a profile piece 5. Profile piece 5 is shown in detail in figure 2.

[0017] Profile piece 5 is embodied on one side with a

protruding rib 12 such that by means of handgrips 13 the tear-off member can be placed in mounting element 4, wherein rib 12 snaps into mounting element 4.

[0018] Profile piece 5 is provided with a chamber 14 for receiving a fixed strip 6a of the blade holder. The fixed strip 6a extends between the two profile pieces 5 and is fixed in each case in a profile piece 5 at each outer end by means of a screw (not shown), which protrudes through a hole 15 in a threaded borehole on the outer end of the first fixed strip 6a.

[0019] The fixed strip is provided with a groove into which a rib 6d of a push strip 6b can be pushed. Between the first and second fixed strips a knife blade 7 can be clampingly received by arranging a spacer in the form of a pressing pin 6c, as shown best in figure 3.

[0020] Profile piece 5 is further provided with a second chamber 16 for rotatably receiving a guide tube 8. Roll R will support against this guide tube 8 and the sheet material wound onto the roll is guided by guide tube 8 along the surface V to a position under knife blade 7.

[0021] Finally, profile piece 5 is provided with a third open chamber 17 for receiving a protective strip 9. The protective strip is fixed on its outer end to the profile piece by means of a screw which is screwed through hole 19 in a threaded borehole on the outer end 18 of protective strip 9.

[0022] Owing to the presence of the protective strip the knife is partly shielded, thereby avoiding a person performing operations in the vicinity of the device being injured on knife blade 7. This protective strip 9 is arranged such that the unwinding of the sheet material is not impeded. This means firstly that the distance between the fixed strip 6b of the blade holder and protective strip 9 must be sufficient to allow free passage of the sheet material. Secondly, it is recommended that the tangent V on guide tube 8 and protective strip 9 substantially corresponds with a tangent on roll R. In this way a smooth unwinding of the sheet material is achieved using a safe, simple device.

[0023] The scope of protection of the invention is not limited to the above described embodiment variants but is defined by the conclusions following hereinbelow.

Claims

1. Device for tearing off one length of sheet material at a time from a sheet material wound onto a roll (R), such as paper, ribbon and the like, comprising a frame (1), a spindle (10) for the roll (R) which is supported by the frame, a tear-off member comprising a knife blade (7) with a sharp edge suspended parallel to the roll, **characterized in that** the tear-off member comprises a protective strip (9) which is arranged opposite the sharp edge of the knife blade substantially parallel thereto and at a distance therefrom.

2. Device as claimed in claim 1, **characterized in that** the tear-off member comprises a guide tube (8) mounted for free rotation between the roll (R) and the knife blade (7).

3. Device as claimed in claim 2, **characterized in that** the tangent on the guide tube and the protective strip substantially corresponds with a tangent of the roll.

4. Device as claimed in any of the foregoing claims, **characterized in that** the tear-off member comprises a knife holder (6a, 6b, 6c) for the knife blade.

5. Device as claimed in claims 4 and 2 or 3, **characterized in that** the knife holder is arranged at a distance from the tangent on the guide tube and the protective strip.

6. Device as claimed in any of the foregoing claims, **characterized in that** each outer end of the spindle (10) is supported in a guide member (11) which is connected to the frame and which inclines in the direction of the knife blade (7).

7. Device as claimed in claim 4, **characterized in that** the knife holder consists of a fixed strip and a push strip (6b) arranged tiltably relative to the fixed strip (6a), between which strips the knife blade can be clamped using a spacer (6c) between the longitudinal end of the fixed strip (6a) remote from the knife blade, and the push strip (6b).

8. Device as claimed in any of the foregoing claims, **characterized in that** the strips of the tear-off member are received at either end in each case in a profile piece (5), each of which can be snapped into mounting elements (4) arranged on either side of the frame.

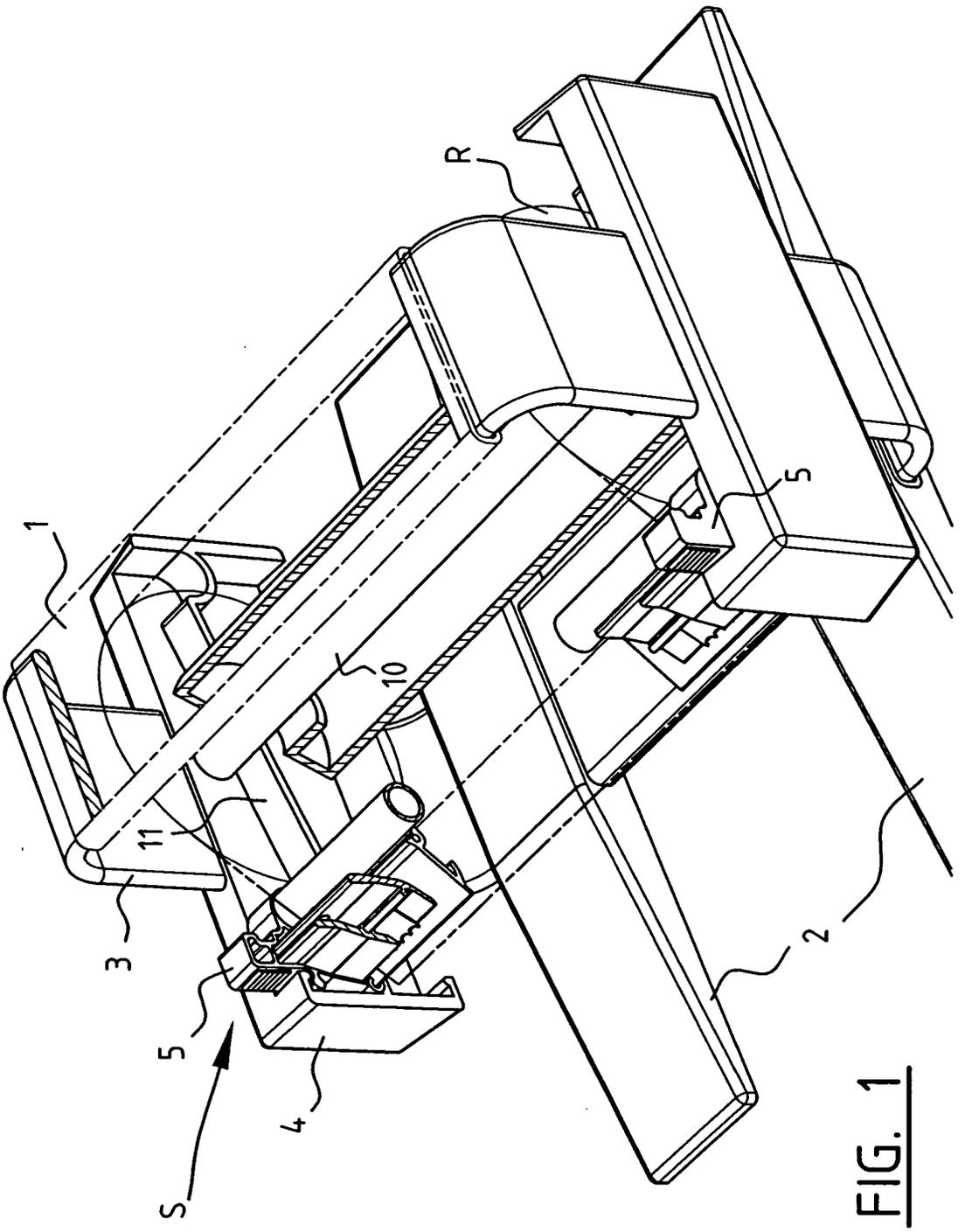

FIG. 1

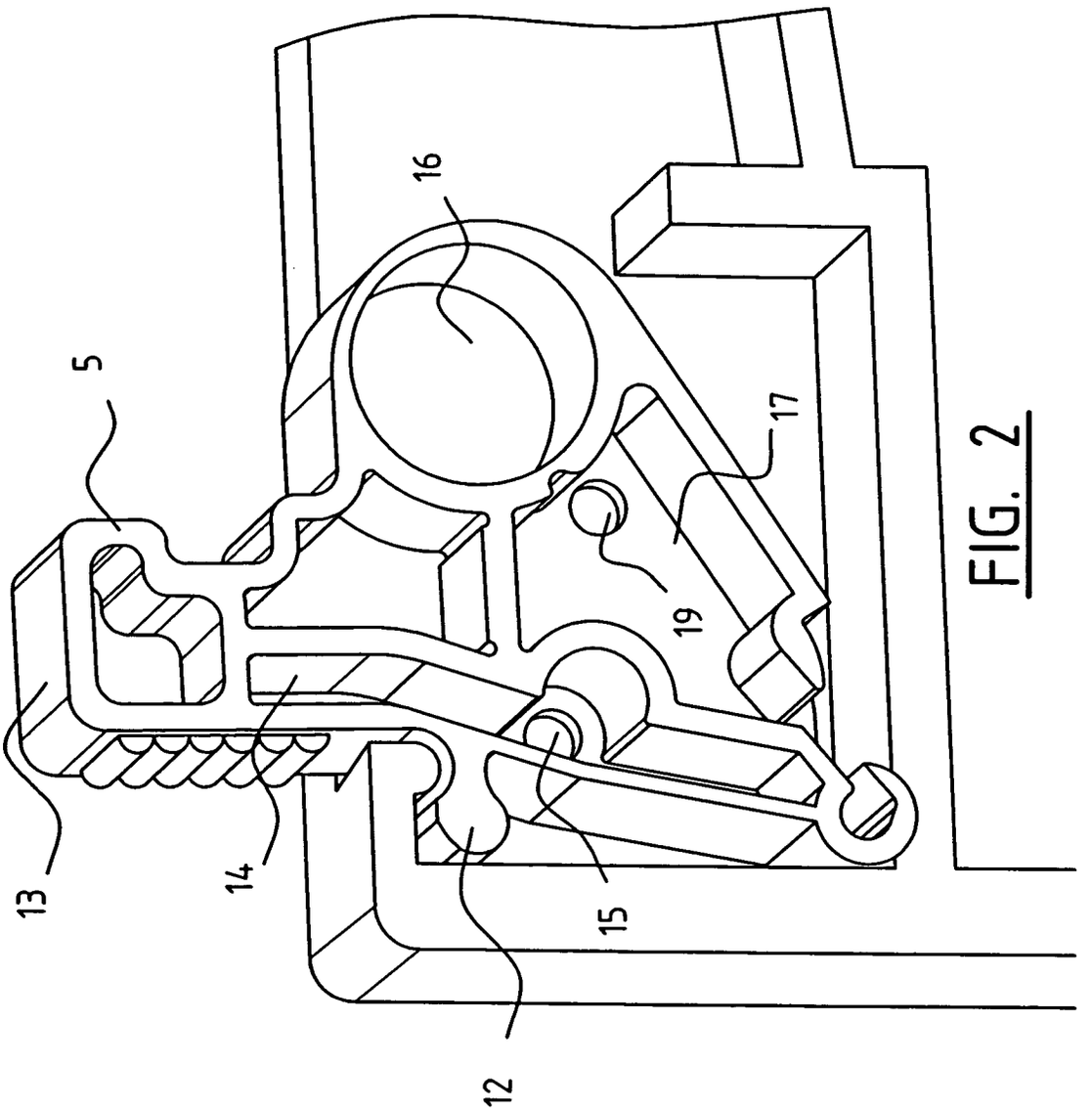

FIG. 2

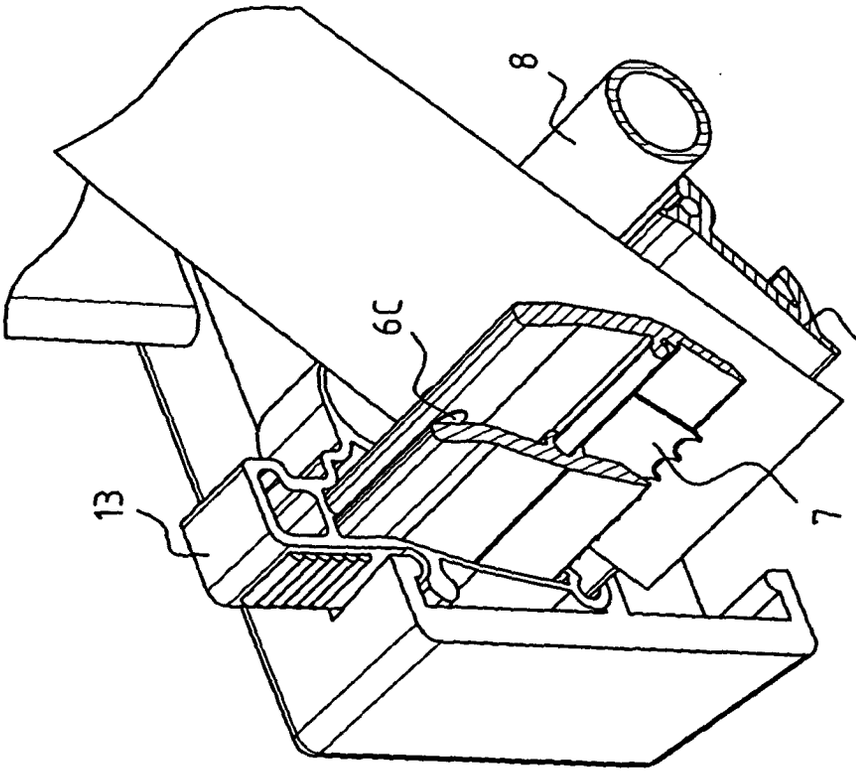

FIG. 3B

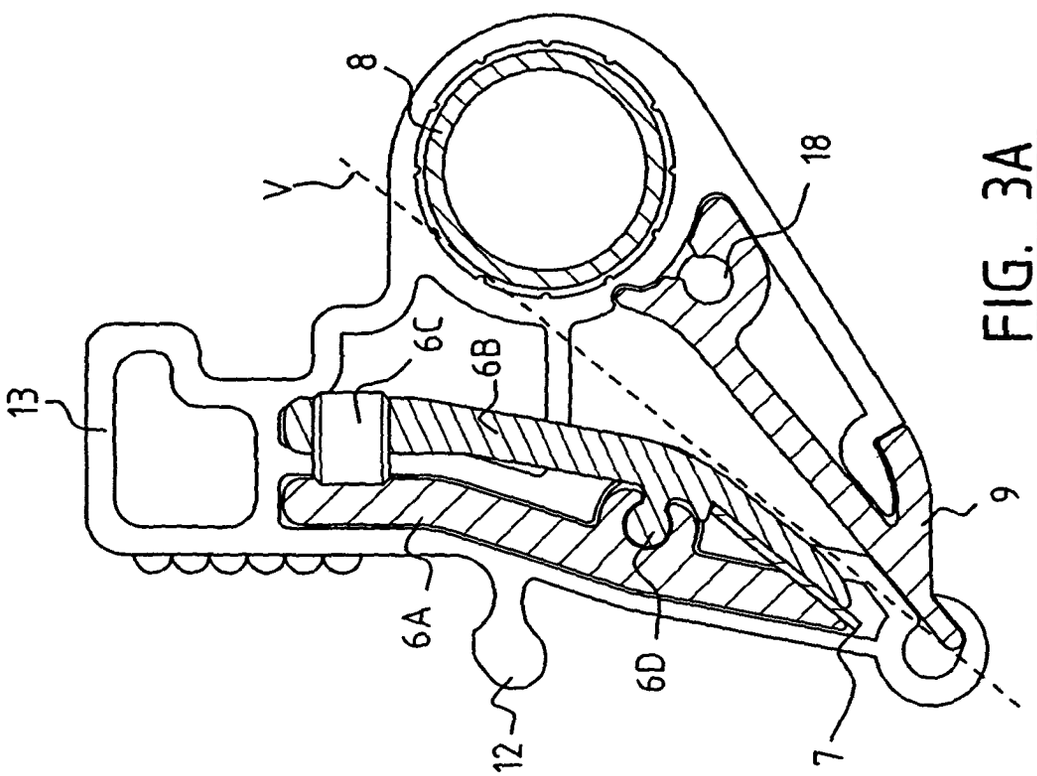

FIG. 3A

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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 7240

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)
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A,D	EP 0 419 735 A (SCHOEN BV) 3 April 1991 (1991-04-03) * the whole document *	1	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	16 November 2004	Stroppa, G

CATEGORY OF CITED DOCUMENTS

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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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