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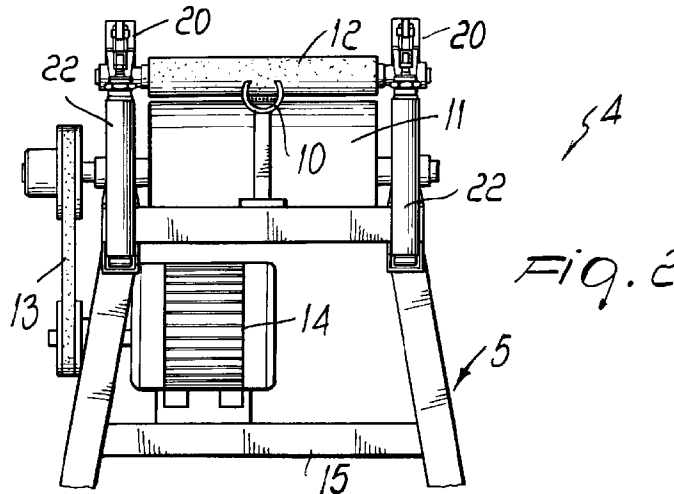
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(54) Warping mill for threads in general with improved thread removing unit

(57) A warping mill for threads in general with improved thread removing unit, comprising, between a creel (2) and a winding unit (3), a thread removing unit (4) provided with mutually opposite and motorizable roll-

ers (11, 12) which can be removably engaged with the threads (30) in order to remove the residues of thread from bobbins of the creel (2).



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Description

The present invention relates to a warping mill for threads in general with improved thread removing unit.

Currently, in conventional warping mills there is the problem of removing the residues of thread that remain on the bobbins of the creel at the end of the winding of said threads.

This operation is currently performed substantially manually by pulling the remaining threads, which are then discarded.

The aim of the present invention is to eliminate the above drawbacks, by providing a warping mill for threads in general with improved thread removing unit which allows to remove the residues of thread substantially automatically, thus allowing optimization in the production steps.

Within the scope of this aim, a particular object of the present invention is to provide a warping mill for threads in general which allows to significantly reduce the use of labor, eliminating an operation which is also unpleasant for operators.

Another object of the present invention is to provide a warping mill which by virtue of its particular constructive characteristics is capable of giving the greatest assurances of reliability and safety in use.

Another object of the present invention is to provide a warping mill for threads in general which can be easily obtained starting from commonly commercially available elements and materials and is furthermore competitive from a merely economical point of view.

This aim, these objects and others which will become apparent hereinafter are achieved by a warping mill for threads in general with improved thread removing unit, according to the present invention, characterized in that it comprises, between a creel and a winding unit, a thread removing unit provided with mutually opposite and motorizable rollers which can be removably engaged with the threads in order to remove the residues of thread from bobbins of the creel.

Further characteristics and advantages of the present invention will become apparent from the following detailed description of a preferred but not exclusive embodiment of a warping mill for threads in general with improved thread removing unit, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a schematic plan view of the warping mill according to the present invention;
figure 2 is a front view of the thread removing unit;
figure 3 is a view of the thread removing unit, seen from the rear side;
figure 4 is a side elevation view of the thread removing unit.

With reference to the above figures, the warping mill for threads in general with improved thread remov-

ing unit according to the present invention, generally designated by the reference numeral 1, comprises a creel 2 and a winding unit 3, of a per se known type, between which a thread removing unit 4 is interposed; as shown more clearly in figures 2 to 4, the thread removing unit is constituted by a supporting framework 5 which is mounted on guiding wheels 6, two whereof are inserted in a guide or path 7 provided on the floor, so as to allow to position the thread removing unit 4 in active positions, i.e., at the path followed by the threads, or optionally in an inactive position, i.e., outside the path followed by the threads.

In its upper part, the thread removing unit 4 has a guiding ring 10 which is arranged in front of a motorized roller 11, opposite which a presser roller 12 is arranged.

The motorized roller 11 is connected, by means of a belt 13, to a motor 14 which is supported by a frame 15 on which elastic means 16 for tensioning the belt 13 act.

The presser roller 12 is supported by a moving frame 20 which is pivoted to the frame 5 at one end 21 and is connected, at its opposite end, to presser pistons 22 which are actuated so as to make the presser roller 12 act against the motorized roller 11, so as to pull the threads 30 and consequently remove all the residues from the bobbins of the creel.

In order to prevent the threads from winding on the motorized roller 11, there is provided a blade 40 which acts against the roller 11 and separates the threads, allowing them to accumulate in a region in front of the thread removing unit 4.

From the above description it is thus evident that the present invention achieves the intended aim and objects; in particular, the fact is stressed that a warping mill is provided in which a thread removing unit is provided which automatically allows to remove thread residues from the bobbins, eliminating all manual operations.

The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may also be replaced with other technically equivalent elements.

In practice, the materials employed, so long as they are compatible with the specific use, as well as the contingent shapes and dimensions, may be any according to requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A warping mill for threads in general with improved

thread removing unit, characterized in that it comprises, between a creel and a winding unit, a thread removing unit provided with mutually opposite and motorizable rollers which can be removably engaged with the threads in order to remove the residues of thread from bobbins of the creel. 5

2. A warping mill according to claim 1, characterized in that said thread removing unit has a framework which is mounted on wheels, one pair whereof can slide in a guiding track to selectively position said thread removing unit in an inactive position and in an active position. 10

3. A warping mill according to claim 2, characterized in that said motorizable rollers comprise a motorized roller which is associated with motor means for rotating it and is supported by said framework, and a presser roller which is supported by a moving frame which can be removably arranged in contact with said motorized roller. 15 20

4. A warping mill according to claim 3, characterized in that said moving frame is pivoted to said framework at one end and is connected to presser cylinders at its other end. 25

5. A warping mill according to claim 3, characterized in that it comprises a blade which acts on the surface of said motorized roller to prevent the adhesion of the threads removed from the bobbins. 30

6. A warping mill according to claim 3, characterized in that it comprises means for tensioning a belt for connecting said motor means and said motorized roller. 35

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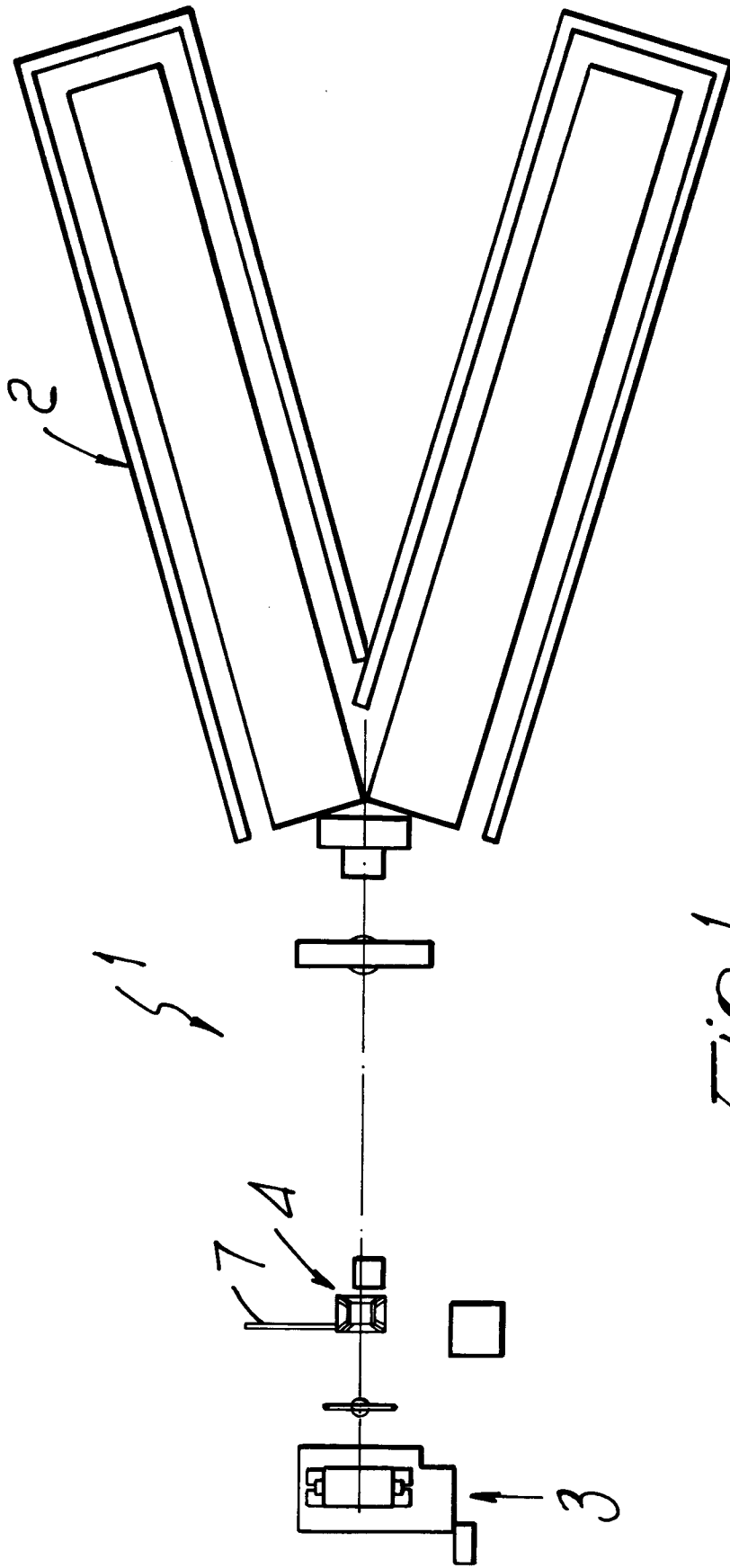


Fig. 1

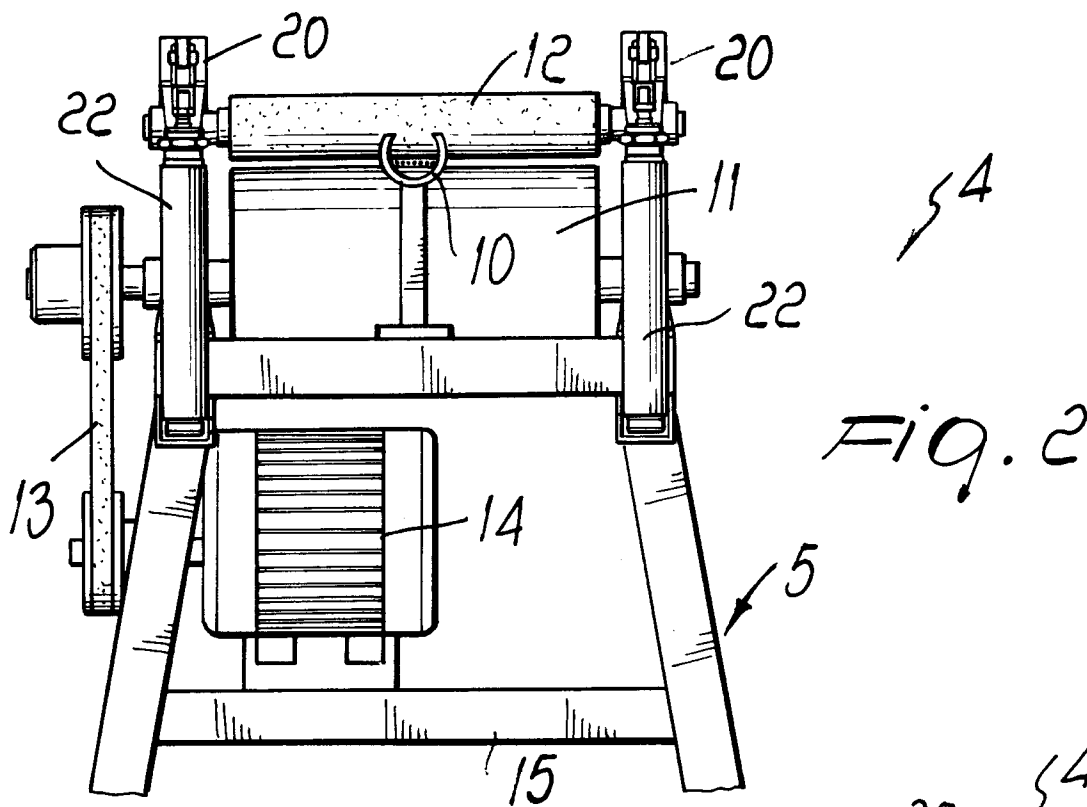


Fig. 2

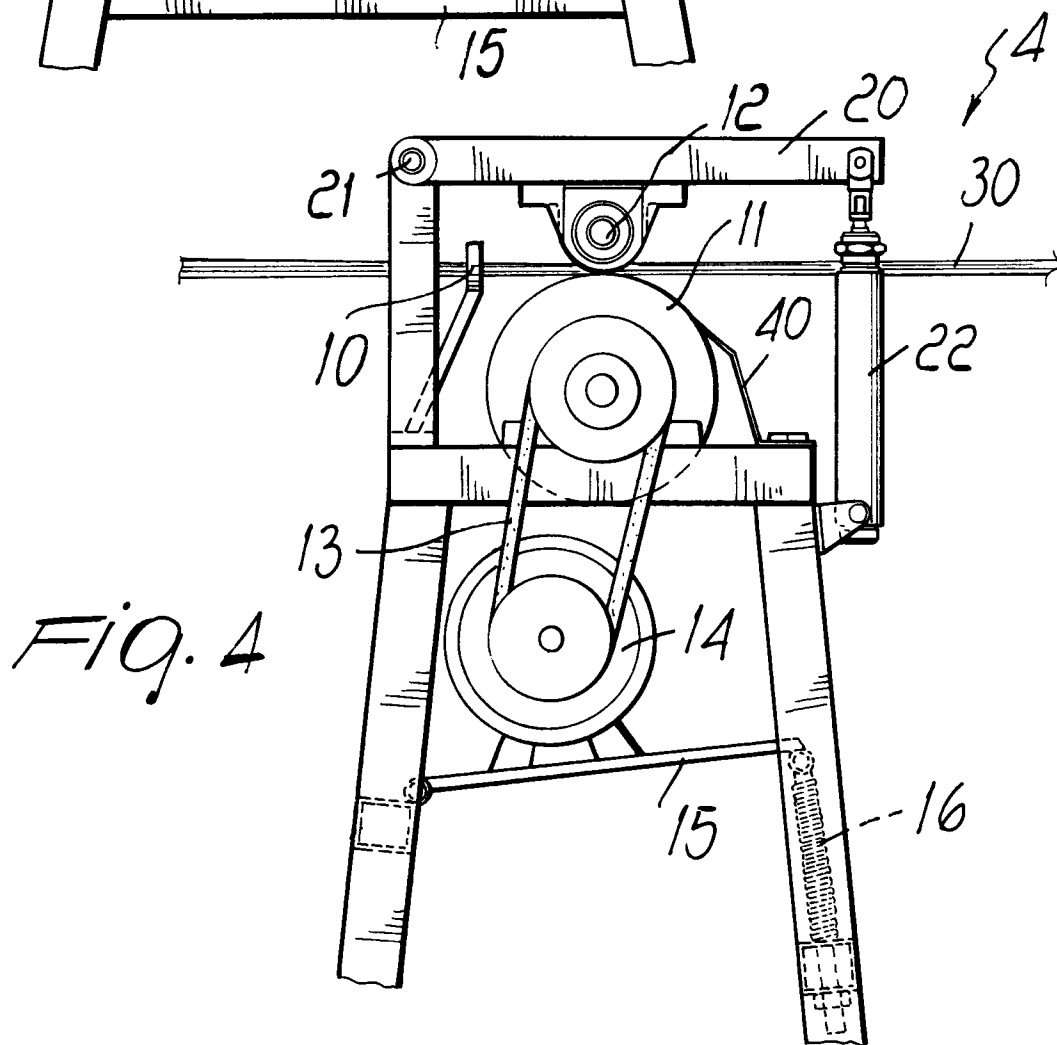
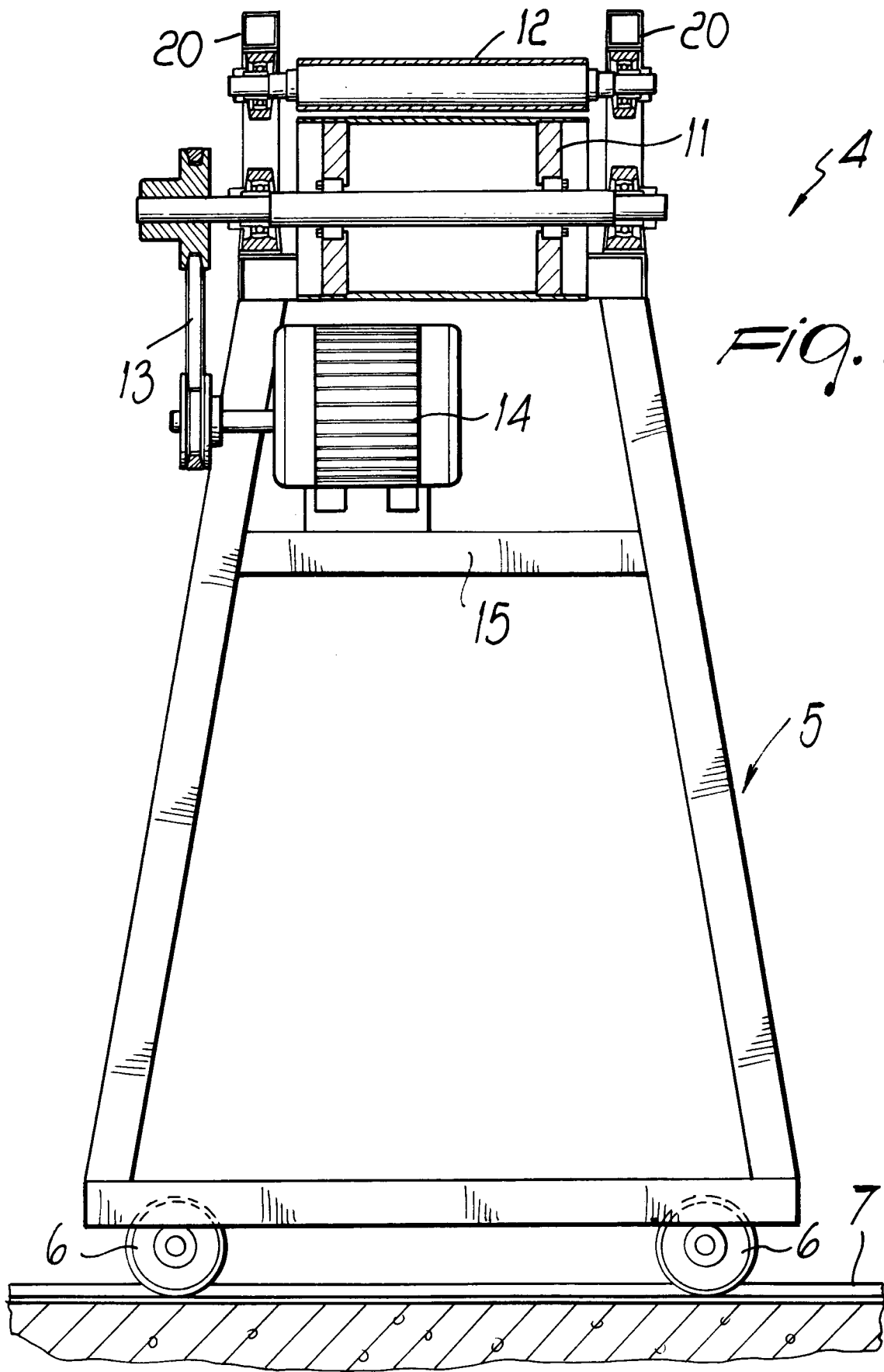


Fig. 4





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EUROPEAN SEARCH REPORT

Application Number
EP 97 12 2880

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.6)
A	EP 0 668 234 A (PLEIJZIER HENDRIKUS) * column 2, line 2 - line 6 * * column 3, line 18 - line 36; figure 1 * ---	1	D02H1/00 D02H3/00 D02H11/00 B65H73/00
A	EP 0 152 919 A (BARMAG BARMER MASCHF) * page 12, line 6 - line 14; figures 1A,1B * ---	1,3	
A	EP 0 483 601 A (MICHELIN & CIE) * figures * ---	1	
A	DE 36 27 946 A (HACOBA TEXTILMASCHINEN) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			D02H B65H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26 March 1998	Examiner Rebiere, J-L
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