



(11) Publication number : **0 493 338 A1**

(12)

EUROPEAN PATENT APPLICATION

(21) Application number : **91830560.8**

(51) Int. Cl.⁵ : **D01G 21/00, B65H 54/76, D01G 15/64**

(22) Date of filing : **17.12.91**

(30) Priority : **21.12.90 IT 6804890**

(43) Date of publication of application :
01.07.92 Bulletin 92/27

(84) Designated Contracting States :
BE DE FR IT

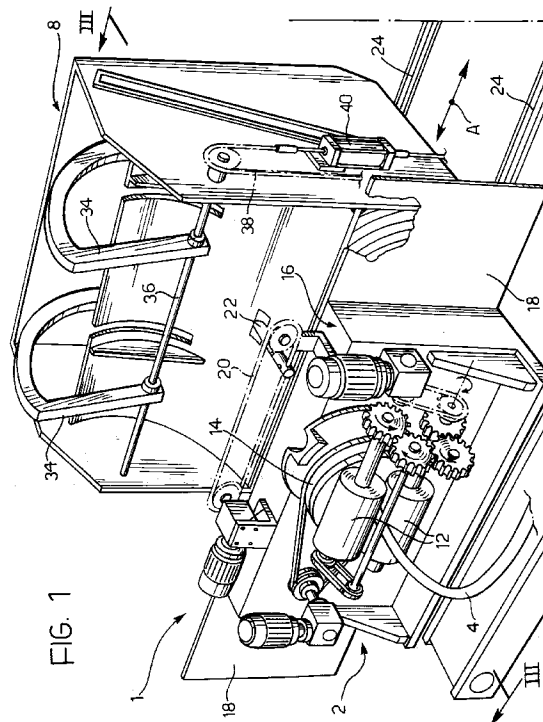
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(54) **A device for accumulating a sliver of textile fibres.**

(57) The device includes a casing (8) defining a collecting chamber (6) with an inlet opening (10) for the sliver, the inlet opening (10) facing a deposition device (14) for feeding the sliver (4) into the collecting chamber (6) in a series of coils. The casing has an outlet opening (28) which is at a higher level than the inlet opening (10).



The present invention relates to a device for accumulating a sliver of textile fibres which is intended to be interposed between a carding unit, or in any case a unit which continuously produces the sliver of discontinuous textile fibres, and a drawing unit.

In known drawing equipment, the sliver of textile fibres coming from a carding unit is collected in containers and is then supplied to the drawing equipment. In known equipment, the sliver cannot be supplied directly from the cards to the drawing equipment since the drawing equipment operates discontinuously with frequent programmed or accidental interruptions whereas the cards have considerable inertia and it is not convenient to slow or stop them when the drawing equipment is slowed or stopped. The object of the present invention is to provide a device for accumulating the sliver which enables the sliver coming from the cards to be supplied to the drawing equipment without a stage in which it is collected in containers.

According to the present invention, this object is achieved by the provision of a device which includes a casing defining a collecting chamber with an inlet opening for the sliver, the inlet opening facing a deposition device for feeding the sliver into the collecting chamber in a series of coils, and the casing having an opening for the outlet of the sliver at a higher level than the inlet opening.

By virtue of this characteristic, a stock of the sliver can be created between the cards and the drawing equipment, so that the cards can operate at a constant speed whilst the drawing equipment is slowed or temporarily stopped. It is essential for the outlet opening for the sliver to be at a higher level than the inlet opening in order to ensure that the weight of the sliver in the collecting chamber bears on the incoming fibre so as to have a compacting effect. No force acts on the sliver at the top of the collecting chamber, however, so it is free to be withdrawn for transportation to the drawing equipment.

Further characteristics and advantages of the present invention will become clear in the course of the detailed description which follows with reference to the appended drawings provided purely by way of non-limiting example, in which:

Figure 1 is a perspective view of a device according to the present invention,

Figure 2 is a partially exploded perspective view of the device of Figure 1, and

Figure 3 is a cross-section taken on the line III-III of Figure 1.

With reference to the drawings, a device, indicated 1, for accumulating a sliver of textile fibres is intended to be interposed between a carding unit and drawing equipment (neither of which is illustrated). The device 1 includes a feeder unit 2 which receives a sliver of textile fibres 4 from the carding unit. The feeder unit 2 conveys the sliver 4 into a collecting chamber 6 defined in a box-like casing 8. As can be

seen in Figures 2 and 3, a front wall of the casing 8 has an inlet opening 10, for example, a rectangular opening. The feeder unit 2 is constituted essentially by a pair of motor-driven rollers 12 which send the sliver 4 to a deposition device 14 of known type facing the inlet opening 10 in the casing 8. The rollers 12 and the deposition device 14 are supported by a fixed structure 16 including a wall 18 which prevents the sliver 4 from coming out through the inlet opening 10. The fixed structure 16 also carries a motor-driven chain 20 which is connected to the casing 8 by a pin 22. The casing 8 is slidable on guide tracks 24 along the line indicated by the double arrow A, perpendicular to the direction in which the sliver 4 is fed into the casing 8.

As can be seen in Figure 3, the collecting chamber 6 in the casing 8 is defined by two concentric cylindrical walls 26 which connect the inlet opening 10 with an upper opening 28 for the outlet of the sliver 4.

The casing 8 also has a pressure member which is intended to exert an opposing force on the sliver 4 in the collecting chamber 6 during the initial stage in which the chamber 6 is being filled. The pressure member is constituted essentially by a plate 30 which is movable in the collecting chamber 6 and is carried by a pair of arcuate arms 32 fixed to respective cranks 34 which are fixed to a shaft 36. The shaft 36 is mounted for rotation on the casing 8 and is rotated by a chain 38 driven by an actuator 40. The plate 30 has a hole 31 for restraining the end of the sliver 4 whilst the chamber 6 is being filled.

In operation, whilst the deposition device 14 feeds the sliver into the collecting chamber 6, the casing 8 is moved to and fro on the track 24 by the motor-driven chain 20. When the sliver is collected in the chamber 6 for the first time, the end of the sliver is inserted through the hole 31 in the plate 30 and the plate 30 is kept pressed against the inlet opening 10. As the sliver gradually collects in the chamber 6, the plate 30 moves upwardly and continues to exert an opposing force on the sliver 4. When the plate 30 reaches a predetermined position, the actuator 40 raises the plate 30 fully to the configuration shown in broken outline in Figure 3. The sliver 4 is then removed manually from the hole 31 and withdrawn from the casing 8 through the upper opening 28. The weight of the sliver in the collecting chamber 6 is sufficient to create an opposing force on the material fed in through the inlet opening 10.

Claims

1. A device for accumulating a sliver of textile fibres which is intended to be interposed between a carding unit, or in any case a unit which continuously produces the sliver of discontinuous textile fibres, and drawing equipment, characterised in

that it includes a casing (8) defining a collecting chamber (6) with an inlet opening (10) for the sliver (4), the inlet opening (10) facing a deposition device (14) for feeding the sliver (4) into the collecting chamber (6) in a series of coils, and the casing (8) having an opening (28) for the outlet of the sliver at a higher level than the inlet opening (10).

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2. A device according to Claim 1, characterised in that the casing (8) is in the form of an open-topped box in a front wall of which is the inlet opening (10).

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3. A device according to Claim 2, characterised in that the collecting chamber (6) has two curved walls (26) which connect the lower inlet opening (10) with the upper outlet opening (28).

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4. A device according to Claim 1, characterised in that it includes a pressure member for exerting an opposing force on the sliver (4) in the collecting chamber (6) until the sliver reaches a predetermined level in the collecting chamber.

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5. A device according to Claim 4, characterised in that the pressure member comprises a movable plate (30) carried by a pair of arcuate arms (32) fixed to respective cranks (34) connected to a rotary shaft (36) driven by a motor-driven chain (38).

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6. A device according to Claim 1, characterised in that the casing (8) is slidable on guide tracks (24) which extend perpendicular to the direction in which the sliver (4) is fed into the casing (8), and in that there are means (20, 22) for causing the casing (8) to move to and fro as the sliver (4) is fed in.

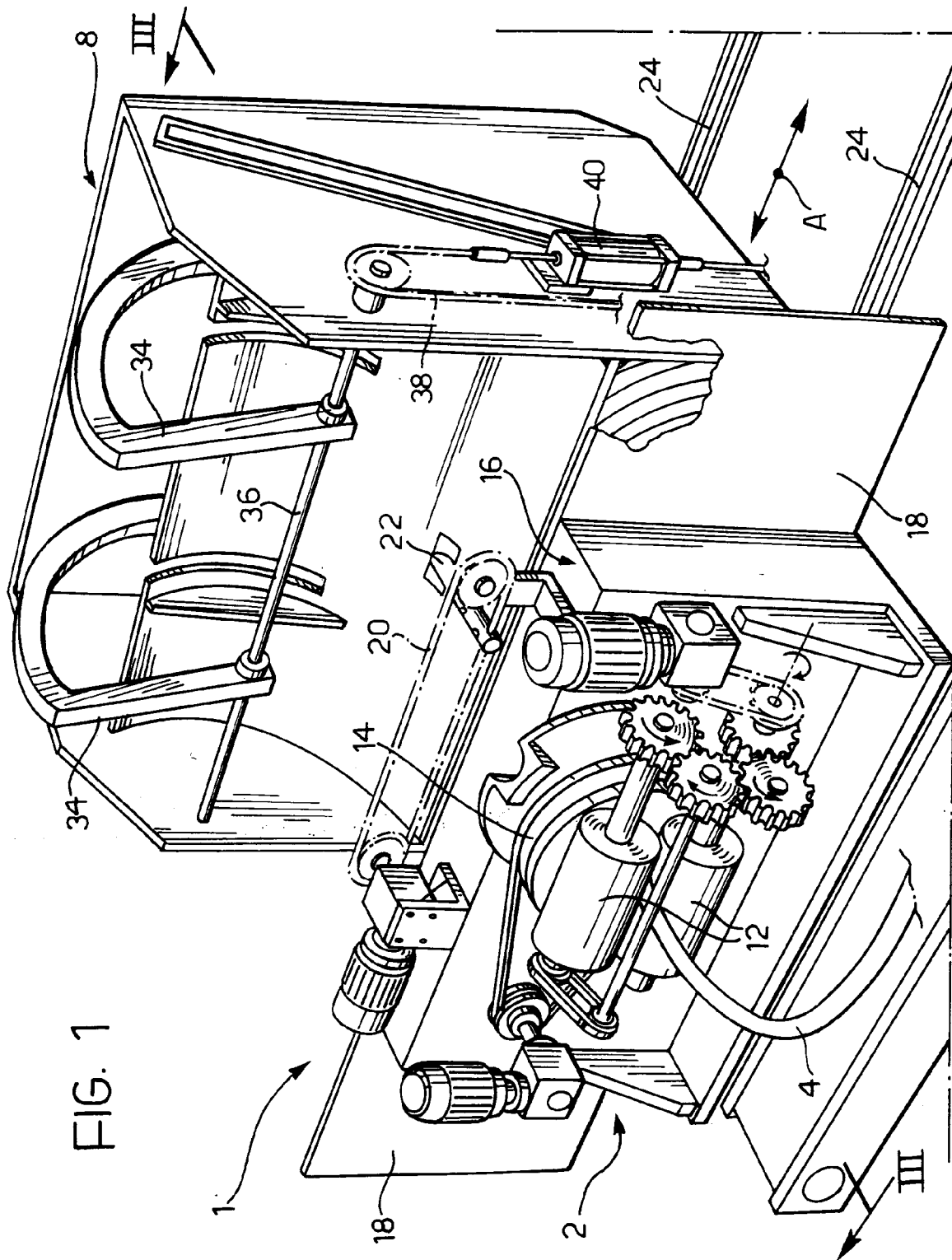
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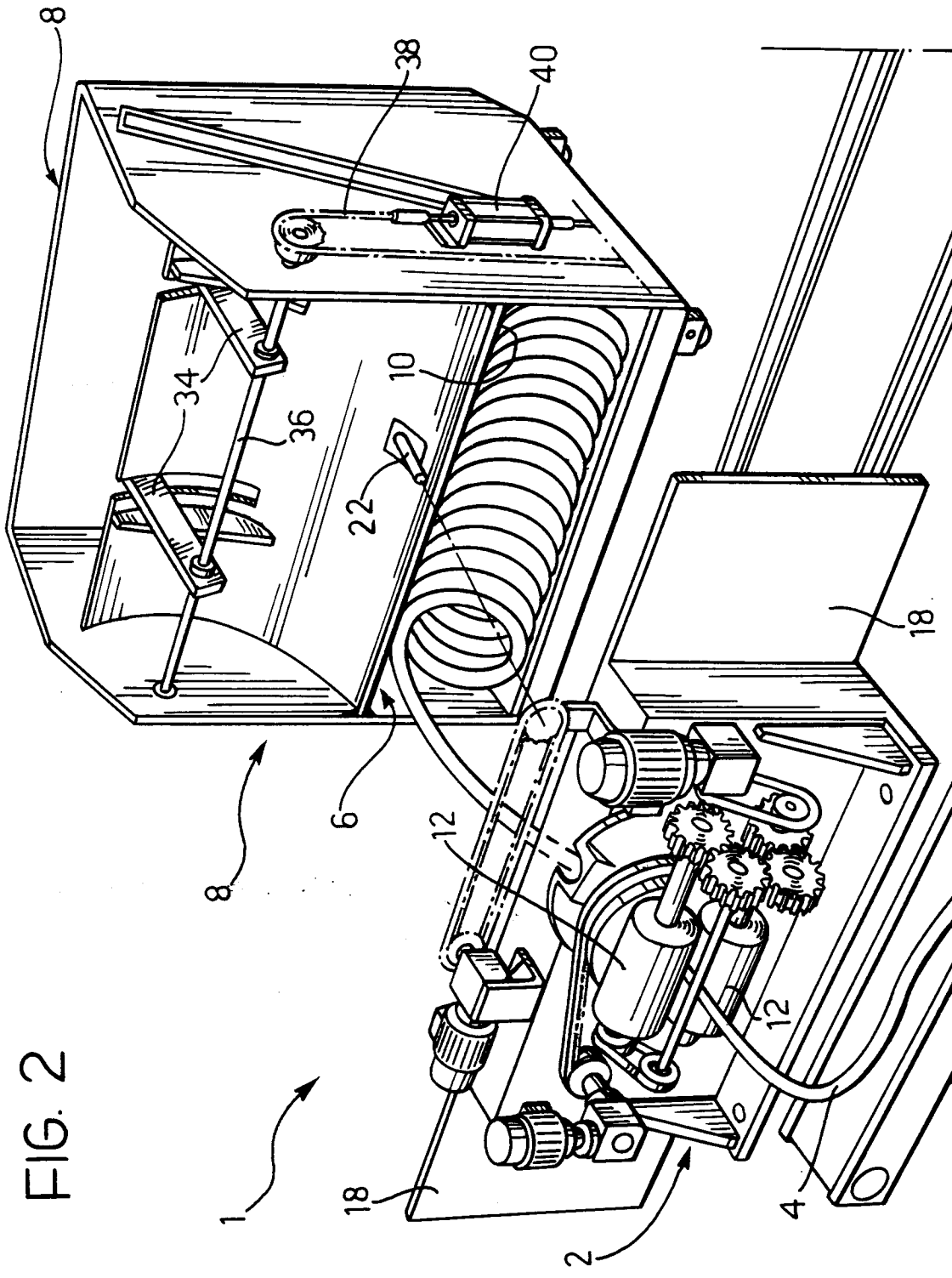
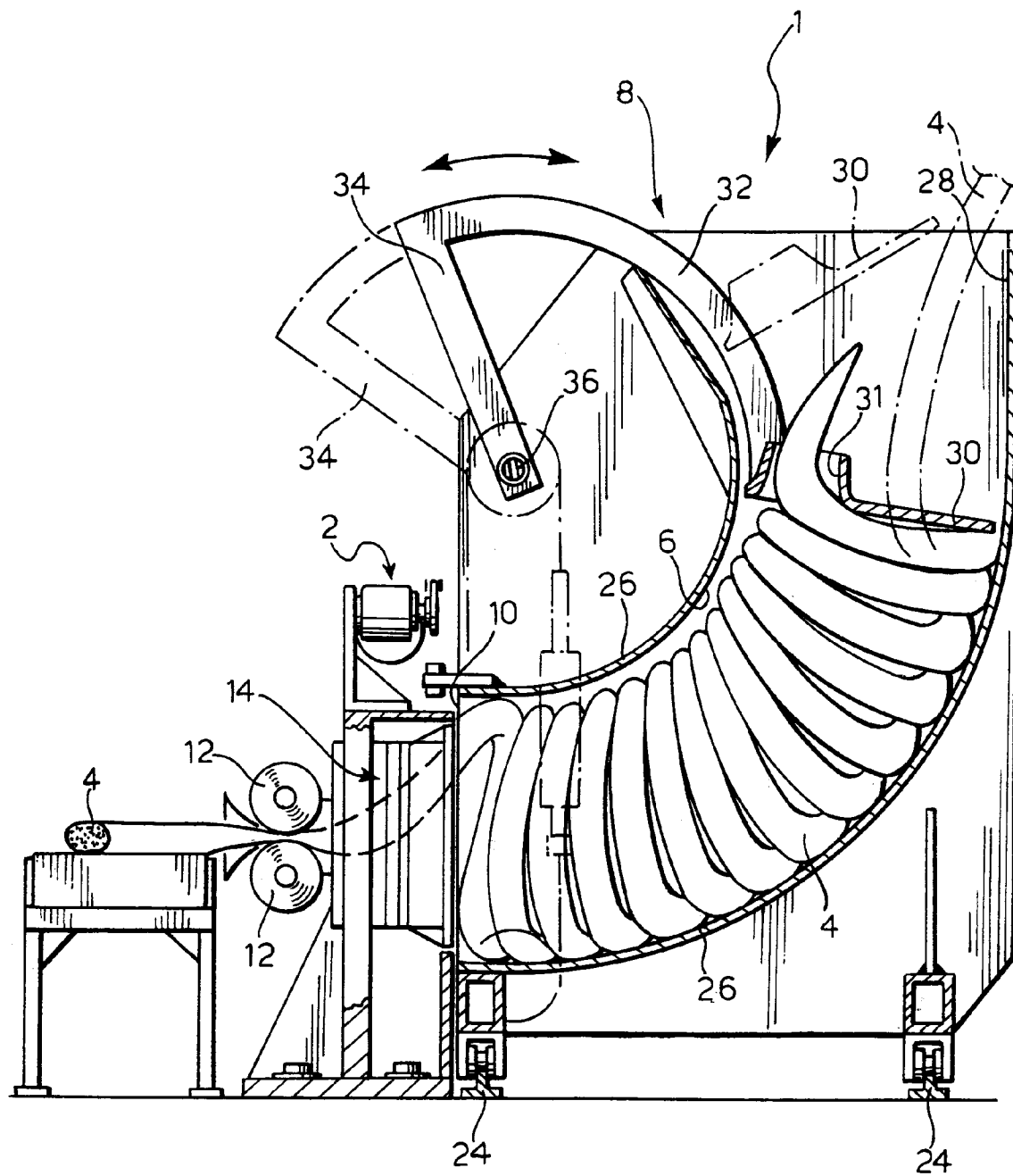


FIG. 3





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 83 0560

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.5)
X	FR-A-1 441 005 (DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT) * the whole document *	1,2	D01G21/00 B65H54/76 D01G15/64
Y		3	
A		4	
Y	DE-A-3 613 147 (SPINNEREIMASCHINENFABRIK SEYOEL & CO GMBH) * column 3, line 48 - column 4, line 12; figure 1 *	3	
A	DE-A-2 849 522 (W. SCHLAFHORST & CO) * the whole document *	1,2,6	
A	GB-A-1 192 559 (MAREMONT CORP.) * page 3, line 56 - page 3, line 92; figure 1 *	1	
A	DE-A-2 543 839 (GRAF & CIE AG)		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			D01G B65H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03 APRIL 1992	Examiner MUNZER E.
CATEGORY OF CITED DOCUMENTS		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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EPO FORM 1503 03.82 (P0401)