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Bezeichnung der Erfindung: Cigarette and cigarette filter making machines

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : G05D 13/62

### ENTSCHEIDUNG / DECISION

vom / of / du 25 April 1988

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent / Molins PLC

Titulaire du brevet :

Einsprechender / Opponent / Opposant : Körber AG

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Art. 56

Kennwort / Keyword / Mot clé : inventive step (yes)

Leitsatz / Headnote / Sommaire



**Summary of Facts and Submissions**

- I. European patent 0 011 510 incorporating 16 claims, was granted 22 August 1984 on the basis of European patent application 79 302 628.7, filed 19 November 1979 and claiming priorities of 17 November 1978 and 17 January 1979 from earlier applications in Great Britain.

Independent Claims 1 and 7 read as follows:

1. A method of making rods of the cigarette industry in which a continuous rod (18) is formed with the aid of a garniture tape (15) and is cut at regular intervals by a rod cutting device (19) to produce separate rod portions, at least two different devices used in the manufacture of the rods being driven by separate motors which are synchronised with one another by a control circuit so as to run at speeds having a predetermined relationship, characterised in that a first one of the separate motors (21) drives the rod cutting device (19) and is arranged to serve as a master by which the speed of production of rods is controlled, and in that a second motor (24) drives the garniture tape (15) at a speed which is automatically controlled in response to the rate at which separate rod portions (20) are cut from the continuous rod (18) by the rod cutting device (19).

7. A machine for making rods of the cigarette industry comprising means for forming a continuous rod (18), including a garniture tape (15), a rod cutting device (19) for cutting the continuous rod at regular intervals to produce separate rod portions, means by which at least two

separate motors (21, 24) are arranged to drive different parts of the machine, and a control arrangement (22, 23) for synchronising the motors so that they run at speeds having predetermined relationships, characterised in that the rod cutting device (19) is driven by a first one of the motors (21) which is arranged to serve as a master by which the speed of production of rods is controlled, in that a second motor (24), is arranged to drive the garniture tape (15), and in that the control arrangement (22, 23) is arranged to control the speed of the second motor (24) in response to the rate at which rod portions (20) are cut from the continuous rod (18) by the rod-cutting device (19).

Claims 2 to 6 are dependent on Claim 1 and Claims 8 to 16 are dependent on Claim 7.

II. A notice of opposition was filed on 17 April 1985 by

Hauni-Werke Körber & Co. KG., Hamburg (DE)  
who changed its name later to  
Körber AG, Hamburg (DE).

The Opponent requested revocation of the patent on the ground of lack of inventive step, and supported his arguments by the following documents:

- (1) DE-A-2 302 313
- (2) FR-A-2 275 160
- (3) ETZ-A 82 (1961), pages 574-579
- (4) DE-A-2 020 199
- (5) US-A-3 181 403
- (6) US-A-3 048 751

The Patentee, in his reply dated 31 October 1985, made additionally reference to:

(1a) GB-A-1 385 053

which is however, only equivalent to document (1) cited above.

- III. The opposition was rejected by a decision of the Opposition Division of 25 August 1986 on the ground that the subject-matters of Claims 1 and 7 were considered to involve an inventive step with regard to the cited prior art.
- IV. On 14 October 1986 the Opponent lodged an appeal against this decision. The appeal fee was paid on the same day, and the Statement of Grounds was filed on 26 November 1986. The Opponent now based his submissions on the documents (1) and (2) cited above and on a further document cited for the first time:
- (7) GB-A-1 249 184.
- V. The Appellant (Opponent) requested that the patent be revoked.
- VI. The Respondent (Patentee), in his reply dated 11 June 1987, held that the Opponent had presented no arguments which justified reconsideration of the decision by the Opposition Division.

A further document:

(2a) GB-A-1 509 018

cited in this reply corresponds to FR-A-2 275 160 cited above (document 2).

VII. The Appellant's submissions can be summarised as follows:

Documents (2), (2a) teach to use, in a cigarette making machine, different drives for a cutting device (25) and for conveyor means (12, 13). The conveyor means can be equaled to the garniture tape in respect of the necessary synchronising between the different means which convey the material through the different places of the machine and the cutting device. It is, therefore, self-evident, if required, to drive also the garniture tape by the second motor (and not together with the cutting device by the first motor as disclosed in the document). In this case it is obvious to choose the first motor as a master and the second motor as a slave, because the skilled man knows that the high speed drive, because of its high inertia, should be designed as the master of the system.

This argument is supported by document (7) that shows a cigarette rod making machine with a high-speed drive (motor 61, transmission means 62) for the cutting device (4) and a drive for the garniture tape (36) which is (mechanically) derived from the high-speed drive. This is to be regarded as a mechanical embodiment of a master-slave arrangement.

The invention represents a special case of a synchronised crosscutter as, for instance, described in document (1). The preferred and extensively described embodiment of this document suggests to use the cutter device as the leading drive.

VIII. The Patentee, submits that the Appellant's submissions have already been thoroughly considered (in the foregoing opposition proceedings) and adds some further comments which can be summarised as follows:

The overall impression conveyed by documents (2), (2a) is that the first drive (27) is for one machine (the rod forming machine including the cutting device) and the second drive (14) is for a separate machine (for conveying and processing a tobacco foil web). There is no suggestion that the rod forming machine itself might have separate drives.

Document (7) describes an earlier system with a high-speed main drive shaft driving the rod cutting device directly. However, in machines designed since the date of this document, normally a low-speed main drive shaft is used and the rod cutting device is driven from that shaft via a step-up gear train.

#### Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. Documents (2), (2a) forming the closest prior art disclose a machine for making rods of the cigarette industry which performs a manufacturing method according to the precharacterising portion of the present Claim 1:

A Continuous rod (24) is formed within a rod forming machine 21. A garniture tape is not expressly disclosed. However, a garniture tape is usually included in a rod forming machine of this kind (see e.g. Document (7) Fig. 1: "forming belt" 36 in the cigarette rod forming means 3) and its presence within the device 21 has to be presupposed, as the Patentee has already acknowledged during the examining proceedings in his letter dated 26 February 1982, page 2, second para.

Separate rod portions 26 are produced by cutting the continuous rod 24 at regular intervals by a rod cutting device 25. The rod cutting device 25 and the rod forming machine 21 are together driven by a common drive (= motor) 27. Further devices used in the manufacture of the rods (conveyor rolls 12/13 and shaping rolls 15/16) are driven by a separate motor (drive 14). Both drives are synchronised by a control unit 28 so as to run at speeds having a predetermined relationship (Document (2a), page 3, lines 9 to 24).

It has never been contested that the method of Claim 1 differs from this prior art by the characterising features.

The cigarette manufacturing machine disclosed in document (7) uses only mechanical shafts and gearings driven by a single electric motor (61).

The further documents cited during the opposition proceedings do not concern cigarette making machines. Therefore, the subject-matter of Claim 1 is deemed to be novel and Claim 1 is appropriately delimited against the closest prior art.

3. The subject-matter of Claim 1 is also deemed to involve an inventive step for the following reasons:
  - 3.1 The method of Claim 1 involves, inter alia, the following steps:
    - (a) choice of the cutting device and the garniture tape as units to be driven by separate motors;
    - (b) choice of a master-slave arrangement with the cutting device drive as the master and the garniture tape drive as a slave.

3.2 Documents (2), (2a) which form the basis of the precharacterising portion of the present Claim 1 teach to use separate motors for the functional group of conveying the tobacco (in the particular form of a fibrous web) to the manufacturing device on the one hand and for the functional groups of the actual manufacturing device for the cigarette rods (rod forming machine 21 and rod cutting device 25) on the other hand.

But no hints are given to provide separate drives for the continuous rod forming machine 21 and no appropriate choice of the master-slave relation is derivable from these documents.

It remains to examine whether any general knowledge and/or the disclosure of the further documents cited in the proceedings could have made the claimed solution obvious.

There is no doubt that it is a commonly known principle that mechanical gearings, which connect different driven parts of a system to a single motor, can, under certain circumstances, be replaced by separate motor drives which are synchronised through appropriate control circuits. However, in a cigarette rod making machine it was preferred to couple the rod cutting device with the garniture tape directly by mechanical gearings as can be understood not only from the prior art discussed above, but also from the further document (7). The exact synchronisation of the drive of the garniture tape with the cutting device is, of course, of particular importance in respect of producing cigarettes with equal lengths. It is clear that a mechanical gearing is the most reliable means to provide an absolute synchronism, and the question to which part of the gearing the motor is coupled is of no relevance in respect of the synchronisation. The Board is therefore satisfied that the coupling of the driving

motor 61 in document (7) to that part of the gearing that leads directly to the cutter device and only through further gearwheels to the garniture tape cannot serve as a model for devising a master-slave relation in a system synchronised only by control signals to the motors.

The Opponent's submission, that the skilled person will preferably choose the high-speed drive as the master in a master-slave concept because of its higher inertia is not properly supported. The Board is therefore satisfied that the exploitation of this principle by choosing the cutting device as the master represents a substantive and not obvious step to the overall solution to reduce the mechanical gearing by providing different drives for the cutting device and the garniture tape.

As far as documents (1) and (1a) are concerned, it is true that Figure 4 teaches the use of a master-slave arrangement, a first motor (61) driving a cutting device (22, 23) and serving as a master for a second motor (60) driving conveyor rolls. However, the documents point out that this choice is optional and that the opposite arrangement might be adopted (document (1a), page 4, lines 21 to 25). Therefore, these documents teach only the obvious matter that in a master-slave relation each drive can be made the master. Any special guidance to the effect which one of the two drives should preferably be made the master under certain preconditions cannot be derived from these documents. In particular, also these documents cannot provide the teaching to make the high speed drive or the drive with the higher inertia the master since the drives shown in the figures of the documents do not apparently differ in this respect.

Nor in respect of the documents (1), (1a) the claimed solution can therefore, in the Board's view, be considered obvious.

3.3 The Board has also taken into account the documents (3) to (6) cited in the decision of the Opposition Division. The Board agrees with the Opposition Division's finding that these documents are not pertinent in the present context.

3.4 In summing up, the Board has arrived at the conclusion that the requirement for inventiveness is met in the present case.

4. The independent apparatus Claim 7 is directed to a machine arranged to carry out all the method steps of Claim 1.

Therefore, the subject-matter of Claim 7 is patentable for the same reasons as Claim 1.

5. Claims 1 and 7 meet therefore the requirements of Articles 52(1) and 56 EPC and can thus be maintained unamended.

The same applies to the dependent Claims 2 to 6 and 8 to 16 which specify specific embodiments of the method or the machine, respectively.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

S. Fabiani

P.K.J. van den Berg

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