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**D E C I S I O N**  
**of 7 March 2000**

**Case Number:** T 0391/97 - 3.2.6

**Application Number:** 92309233.2

**Publication Number:** 0543493

**IPC:** B26D 5/20

**Language of the proceedings:** EN

**Title of invention:**

Method and apparatus for changing the length of envelope  
blanks cut from a continuous web

**Applicant:**

F.L. Smithe Machine Company Inc.

**Opponent:**

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**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

"Inventive step (no, obvious combination of known features)"

**Decisions cited:**

-

**Catchword:**

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Boards of Appeal

Chambres de recours

**Case Number:** T 0391/97 - 3.2.6

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.6**  
**of 7 March 2000**

**Appellant:** F.L. Smithe Machine Company  
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Pennsylvania 16635 (US)

**Representative:** Enskat, Michael Antony Frank  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 29 November 1996  
refusing European patent application  
No. 92 309 233.2 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** P. Alting van Geusau  
**Members:** M. Bidet  
J.-C. De Preter

## Summary of Facts and Submissions

- I. European patent application No. 92 309 233.2 (publication No. 0 543 493) was refused by the Examining Division by decision announced during oral proceedings held on 15 November 1996 and despatched in writing on 29 November 1996.
- II. The reasons given for the refusal were that the subject-matter of the independent claims 1 and 15 filed during the oral proceedings gave rise to objections under Article 123(2) and did not satisfy the requirements of Article 52(1) in combination with Article 56 EPC having regard to the documents:

D1: EP-A-0 011 595 and

D2: US-A-4 136 591.

In particular, the Examining Division took the view that it was neither disclosed in the patent application as originally filed that a first sensor connected to the cutter means comprised means for counting pulses nor that other means for carrying out a pulse count was provided nor that the rotational position of the cutter means of the claimed envelope blank forming machine was determined from the input signal of the first sensor.

As regards the lack of inventive step, the Examining Division was of the opinion that the features which distinguished the subject-matter of the independent claims 1 and 15 from the apparatus and method disclosed in document D2 were known from D1.

In view of the advantages described in D1 as well as the high degree of structural similarity between the machines according to D2 and D1, it would be obvious to the skilled person to include the features described in D1 in the envelope blank forming machine according to D2. He would thus arrive at the subject-matter of claims 1 and 15, without the exercise of inventive step.

III. The appellants lodged an appeal against this decision received on 28 January 1997 and paid the appeal fee the same day. With the statement of grounds of appeal received on 27 March 1997, the appellants submitted two sets of new independent claims 1 and 15, in accordance with a main and an auxiliary request ("proposed amendment I" and "proposed amendment II" respectively).

Since in essence, the independent claims of the auxiliary request differ from those of the main request in that the features concerning the second sensor (59) are transferred from the characterising part to the precharacterising part of the claims, and since the independent claims 15 of the requests are related to method steps corresponding to the features of the apparatus according to the respective claims 1, only the text of claim 1 of the auxiliary request is given below:

"1. A blank forming apparatus comprising, a machine frame of a blank forming machine (14), cutter means (22) rotating supported in said machine frame (14) for severing the continuous web (12) at preselected intervals to form blanks (16) of a selected length, cutting drive means (34, 36) for continuously rotating

said cutter means (22) at a preselected speed, pull rolls (18, 20) rotatably supported in said frame (14) for feeding the web (12) of envelope material unwound from a roll to said cutter means (22) at a preselected feed rate, pull roll drive means (40, 42, 44, 46, 48) for rotating said pull rolls (18, 20) at a preselected speed, control means (50) electrically connected to said pull roll drive means (40, 42, 44, 46, 48) for incrementally adjusting the rate of rotation of said pull rolls (18, 20) to generate the required feed rate of the web so that upon rotation of said cutter means (22) the web (12) is cut at specific intervals corresponding to a preselected length of blank (16) cut from the web (12) where the length of the blank (16) cut from the web (12) is determined by the rate of rotation of said pull rolls (18, 20), a first sensor (58) connected to said cutter means (22) for generating input signals representative of the positional changes of the rotating cutter means (22) to said control means (50), a second sensor (59) connected to said pull roll drive means for generating an input signal representative of the rotation of said pull rolls (18, 20) from said pull roll drive means (40, 42, 44, 46, 48) back to said control means (50), operator means (52) electrically connected to said control means (50) for transmitting an input signal to said control means (50), said operator means input signal corresponding to a selected length of blank to be cut from the web (12) of material, and said control means (50) being responsive to the input signals received from said first sensor (58), said second sensor (59), and said operator means (52) to determine if an adjustment needs to be made in rotation of said pull rolls (18, 20) in response to the input signal received from said

operator means (52) to obtain the selected length of blank (16) cut from the web (12), and said control means (50) being responsive to the need for an adjustment by generating an output signal to said pull roll drive means (40, 42, 44, 46, 48) to continuously rotate said pull rolls (18, 20) at the speed required to cut the web (12) at selected intervals to obtain the selected length of envelope blank (16) characterised in that said apparatus is a blank forming machine and said blanks are envelope blanks, said control means (50) is responsive to the inputs from said first and second sensors (58, 59) for the duration of a selected input signal from the operator means representing a selected length, to synchronise the rotation of the pull rollers with the position of the cutter means (22)."

IV. In a communication issued on 25 January 2000, after having fixed a date for oral proceedings to be held on 7 March 2000, the Board expressed the provisional opinion that the claims 1 and 15 in accordance with the appellant's requests did not give rise to objections under Article 123(2) EPC and that novelty of their subject-matter was established in view of documents D1 and D2.

However, concerning clarity of the claimed subject-matter, it appeared that, since a rate change of the pulsed signal represented only a variation of the speed of the knife cylinder, the pulsed signal itself could not represent a reference signal for a synchronisation of the pull-rolls with the knife cylinder or with registration marks made on the web in accordance with a further embodiment disclosed in the patent. Consequently, without any signal for a reference

position of the knife cylinder associated with the encoder, it was not clear how the synchronisation was achieved.

The question was also addressed whether an inventive step would have been necessary to use the paper material of document D2 in the blanks forming apparatus known from document D1 in order to cut webs at preselected lengths for forming envelopes.

V. In reply, the appellants filed further submissions with letter of 3 March 2000 and stated that they would not attend the oral proceedings on 7 March 2000. They would, however, like to make further submissions in writing and to allow the case to be decided on the basis of the papers submitted so far.

VI. The appellants requested that the decision under appeal be set aside and that a patent be granted

- on the basis of independent claims 1 and 15 according to the main request, or according to the first auxiliary request; both requests being filed with the statement of grounds, or
- as further auxiliary requests, on the basis of the deletion of any non-allowable dependent claims in the main request (as second auxiliary request) or in the auxiliary request (as third auxiliary request), as well as any consequential amendments needed to the text.

VI. Oral proceedings took place on 7 March 2000. As announced the appellants did not appear. In accordance

with the provisions of Rule 71(2) EPC, oral proceedings were held in the absence of the appellants.

VII. In its written submissions in support of the requests, the appellants essentially relied on the following arguments:

When compared to the blank forming apparatus derivable from document D1 in which there was basically an open loop control system, the subject-matter of claim 1 differed therefrom in that the control system according to claim 1 included a closed loop system responsive to a sensor on the pull-roller and a sensor on the cutter drum to sense any drift between the two and to provide instant correction.

Furthermore, there was no fixed positional relationship between the circumference of the pull-rollers and that of the cutter drum.

The combination of D1 and D2 alone did not render the invention obvious since there was nothing in the prior art to suggest the further step of synchronising the rolls with the cutter.

As regards the objections raised in respect of clarity it was submitted that a rollover calculation between the knife cylinder encoder and the encoder associated with the servo-motor of the pull-roll allowed for a software solution of the synchronisation. This matter would be clear to a person of ordinary skill in the envelope blank making machine industry.



## Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

The present claims 1 and 15 according to main and auxiliary request comprise the features of original claims 1 and 15 and further contain a more detailed definition of the control system. The Board is satisfied that the amendments are supported by the description of the patent application as filed. More particularly, there is no longer a mention of means for counting pulses of the input signal from the first sensor associated to the cutter means as was objected to by the Examining Division.

3. *Main request*

According to Rule 29(1)(a) EPC, the claims shall contain in the precharacterising part the technical features which are necessary for the definition of the claimed subject-matter which, in combination, are part of the prior art. Since document D1, which serves as the closest prior art, discloses an apparatus having two speed sensors (11,14 and 32,33 respectively) for monitoring the relative speed between the cutter means and pull-roll drive means, the fact that the second sensor is mentioned for the first time in the characterising part of the claim does not meet the requirements according to Rule 29(1)(a) EPC. Claim 1 according to the main request is, therefore, not allowable, and already for this reason the main request

is not acceptable.

4. *Auxiliary request*

4.1 Claim 1 according to the auxiliary request mentioning the second sensor in its precharacterising part meets the requirements of Rule 29(1)(a) EPC and does not give rise to objections in this respect.

4.2 Novelty

Novelty of the subject-matter of claim 1 according to the auxiliary request follows from the fact that the available prior art does not disclose an envelope blank forming apparatus in which synchronisation of the rotation of the pull-rollers with the position of the cutter means is achieved with control means responsive to the inputs from first and second sensors.

5. The main issue to be considered in the present appeal is, therefore, whether the subject-matter of claim 1 involves an inventive step.

5.1 Document D1 is concerned with the same general problem as that of the patent application i.e. to provide a blank forming apparatus in which, when the paper web is fed by the pull-rolls to the cutting means, the rotation of the knife cylinder severs the web at preselected intervals to form blanks at a preselected length. The blank length is determined by the feed rate of the web. The blank forming apparatus comprises a circuit (see Figure 3 of D1) having the function of controlling the motor 1 driving the paper feed pull-rolls; a control system continuously adjusting the

pull-rolls rotation, comprising a first sensor 11,14 (equivalent to sensor 58 of the patent application) generating signals (Refvit2 in D1) representative of the rotational speed of the knife cylinder (9 in D1, equivalent to 24); a second sensor (encoder 32,33 in D1, equivalent to 59) generating a signal ("Refvit1" in D1) representative of the rotational speed of the pull-rolls; a unit 120 for control of the motor 1 driving the paper feed pull-rolls in dependence upon the sensed speed values and operator means for entering the desired blank length with a signal representative of the desired blank length value.

- 5.2 The difference between the signal of the sensor generating a signal representative of the rotational speed of the knife cylinder (from the first sensor) and that entered into the unit 120 which is representative of the desired blank length is used to adjust the rotational speed of the pull-rolls (see D1, page 6, line 25 to page 7, line 27). The controller receiving a signal from the first sensor, the second sensor and the input signal from the operator means is associated to other circuits of Fig.3 permitting a generation of a correction signal when a phase shift appears in the paper web. A detector 15 in D1 associated with the notch wheel 12 produces one pulse at each revolution of the shaft of the cutting means which gives a reference signal ("Synchr") for the synchronisation. A further signal ("Lectrep") is produced when a registration mark 71 passes below a further detector (13 in D1, equivalent to 62).

According to D1 a change of length of the blank normally requires a new position of the detector 12 and

another angular position of the notched wheel generating the signal "Synchr". However, it is also indicated that the best solution consists in using appropriate software of the controller while it is easy for a skilled person to program the processor accordingly (see page 10, lines 21 to 31 and page 12, lines 6 to 13).

- 5.3 The appellants submitted that the system disclosed in D1 basically concerned an open loop control whereas the system in accordance with claim 1 relied on closed loop control. In particular, the pull-rolls in D1 were driven in a predetermined speed ratio relationship with the cutter drum and for changing the blank size that ratio was varied by operation of a rheostat. Although superimposed on this system was a secondary control system which acted to synchronise the positional relationship between marks on the web with the angular position of the cutter, nothing ensured that the positional relationship between the pull-rolls and the cutter drum was maintained.

However, it is to be noted that claim 1 does not relate to a specific control system in structural terms but merely defines that the control means is responsive to the inputs of the two sensors for synchronising the rotation of the pull-rolls with the position of the cutter means.

In this respect also the control system disclosed in D1 relies on two speed signals detected by sensors related to the cutter and pull-rolls, respectively (14 and 33 in the embodiment disclosed in relation to Figures 1 to 4). The signal (118) derived from the pull-roll speed

signal (sensor 33) is used together with the signal derived from the cutter as inputs for the controller 120 with a view to synchronising the rotation of the pull-rolls and position of the cutter means (see page 10, lines 21 to 31). Other synchronising signals, such as signals representing marks on the web (sensor 13) may be involved but this is not excluded by the content of the present claim 1 and it is to be noted that also in the patent in suit such alternative further synchronising is envisaged (sensor 62).

- 5.4 Therefore, in addition to the precharacterising features acknowledged by the appellants as being disclosed in D1, also the characterising features concerning the functioning of the control means are comprised in this prior art control system.

Consequently, the single remaining distinguishing feature of the apparatus according to claim 1 is the fact that the cut blanks are envelope blanks.

- 5.5 Considering whether an inventive activity was necessary to use the blank cutting machine according to D1 for cutting envelope blanks, the Board is of the opinion that not only the skilled person would be aware of the fact that, within certain constructional limitations, the blank cutting machine disclosed in D1 is suitable for cutting accurately any specific length of material from a web, but also that in view of the possibility to freely adjust the length to be cut from the web, this known blank cutting machine is particularly suitable for use as an envelope blank cutting machine when compared to the envelope cutting machine disclosed in D2, in which the adjustment is limited by the

restricted possibilities of the variable speed transmission comprised therein.

- 5.6 Therefore, the skilled person working in the paper cutting art would be led by the disclosures of D1 and D2 to adopt the machine disclosed in D1 for cutting envelope blanks and arrive in an obvious manner at the apparatus in accordance with claim 1 of the appellant's auxiliary request.

Consequently, the subject-matter of this claim does not involve an inventive step as required by Article 52(1) in combination with Article 56 EPC.

Since at least claim 1 is not acceptable the appellant's auxiliary request must be rejected.

6. *Second and third auxiliary requests*

The second and third auxiliary requests comprise claim 1 of the main request and claim 1 of the auxiliary request, respectively. Because the independent claims 1 fail to comply with the requirements of the EPC, the further requests have to be rejected as well for the above reasons.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau