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D E C I S I O N
of 11 January 2000

Case Number: T 0434/99 - 3.2.1

Application Number: 96117222.8

Publication Number: 0771741

IPC: B65D 85/16

Language of the proceedings: EN

Title of invention:
Reusable bale wrap kit for compressed, resilient fibers

Applicant:
Celanese Acetate, LLC.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0434/99 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 11 January 2000

Appellant: Celanese Acetate, LLC.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 4 November 1998 refusing European patent application No. 96 117 222.8 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: F. Gumbel
Members: M. Ceyte
J. van Moer

Summary of Facts and Submissions

I. European patent application No. 96 117 222.8 (publication No. 0 771 741) was refused by a decision of the Examining Division posted 4 November 1998.

The reason for the refusal was that the claimed subject-matter did not involve an inventive step having regard to:

D1: EP-A-0 608 871

D2: US-A-4 628 709

D3: EP-A-0 324 577

D4: US-A-3 138 841

II. On 19 December 1998 the appellant (applicant) lodged an appeal against the decision and paid the prescribed appeal fee.

The statement of grounds of appeal was filed on 22 February 1999.

III. Oral proceedings were held on 11 January 2000.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 5, the amended description and the drawings as submitted in the course of the hearing.

It presented detailed arguments why in its opinion the claimed subject-matter was inventive over the cited

prior art.

Amended independent claims 1 and 3 read as follows:

"1. A method for wrapping a bale of compressed, resilient fibers comprising the steps of:
providing a reuseable bale wrap kit, said kit including at least two pieces, each said piece, when joined together, being adapted for substantially enclosing and being adapted for containing the bale of the compressed, resilient fibers, and mushroom and loop fasteners located along an edge portion of each said piece and being adapted for joining said pieces to one another;
providing uncompressed, resilient fibers;
surrounding a portion of said uncompressed, resilient fibers with said kit;
compressing said fibers; and
engaging said mushroom and loop fasteners)
wherein said mushroom and loop fasteners being adapted to have a shear strength of less than or equal to 207 kPa (30 pounds per square inch)."

"3. A reuseable kit for wrapping a bale of compressed, resilient fibers comprising:
a top cap being formed from a sheet having a plurality of edge portions, and a mushroom and loop fastener means being disposed on each said edge portion;
a girth wrap being formed from a sheet having at least two edge portions, and a mushroom and loop fastener means being disposed on each said edge portion; and
a bottom cap being formed from a sheet having a plurality of edge portions, and a mushroom and loop fastener means being disposed on each said edge

portion; said mushroom and loop fastener means of said top cap being engagable with said mushroom and loop fastener means along said first edge portion of said girth wrap, and said mushroom and loop fastener means of said bottom cap being engagable with said mushroom and loop fastener means along said second edged portion of said girth wrap; and
wherein said mushroom and loop fasteners means being adapted to have a shear strength of less than or equal to 207 kPa (30 pounds per square inch)."

Reasons for the Decision

1. The appeal is admissible.

2. *Formal matters*

The features of method claim 1 are in essence disclosed in original claims 1 and 2.

The features of claim 3 for a reusable kit are based on original claims 5 and 6.

There are thus no formal objections under Article 123(2) EPC to the amended claims.

3. *Novelty*

The Board is satisfied that the subject-matter of amended independent claim 1 and that of claim 3 are novel over the cited prior art.

Since novelty has never been disputed, there is no need for further detailed substantiation of this matter.

4. *Inventive step*

4.1 Document D1 which represents the closest prior art is acknowledged and evaluated in the introductory part of the description.

This prior art relates to a method for wrapping a bale of compressed resilient fibres as well as a kit therefor. It is said that such kit which utilized loop and hook type fasteners was not commercially viable because the practical, reusable life of the kit, as demonstrated by actual field testing and plant simulations, was limited to a maximum of 2 cycles or 1 reuse. The loop and hook fasteners of the kit according to this citation are also said to have a shear strength ranging from 34 to 40 pounds per square inch (psi) (column 1 second paragraph of the European patent).

Therefore the technical problem to be solved by the present invention is to provide a method and a kit of this known type for wrapping a bale of compressed resilient fibres which overcome the above disadvantage, i.e. which afford a substantially longer reusable life and thus result in cost savings over the prior art allowing only one reuse.

4.2 This problem is solved by the following features stated in method claim 1 and in claim 3 for a bale wrap kit:

(i) the fasteners are of the loop and mushroom-type

(ii) said fasteners have a shear strength of less than or equal to 207 kPa (30 pounds per square inch).

As submitted by the appellant in its written and oral submissions the invention claimed is based on the recognition that although fasteners of the kind comprising loop members should have a sufficiently high shear strength to withstand the internal force of the bale of compressed resilient fibres and thus to keep the bale wrap closed. The use of a high shear strength fastener on the other hand was found to cause the destruction of the loop members when opening the fastener and reduces its cycle life. Thus according to the claimed teaching eminently suitable fasteners for bale wrap kit should be of the loop and mushroom-type possessing a shear strength of less than 207 kPa (30 pounds per square inch).

4.3 As to the question whether there is any suggestion in the cited prior art of a loop mushroom-type fastener having a relatively low shear strength for use in a bale wrap kit, the following is to be observed:

The invention being the subject of US Patent D2, is concerned neither with loop and hook-type ("Velcro" type) fasteners nor with loop and mushroom-type fasteners. The invention is said to relate to loop and "pancake"-type fasteners, that is "pancake" hooking members co-operating with loop members. As shown in Figure 8 these "pancake" hooking members possess, contrary to the symmetric configuration of the conventional "mushroom" hooking members, an asymmetric configuration, that is on the one side of the stem an arcuate end portion and on the other side a tapered end

portion. The arcuate end portion of the pancake hooking members is said to be somewhat similar to the well known "mushroom" type hooking members, while the tapered end portion is of greater flexibility than the arcuate end portion (see column 9, lines 9 to 12).

In its introductory part document D2 refers to known loop and hook type-fasteners. It is stated that in an effort to reduce cost of production it has been recently proposed to produce loop and mushroom-type fasteners (see the paragraph bridging columns 1 and 2). This citation goes on to state that such fastener materials have exhibited disadvantages peculiar to their production and configuration: the materials having mushroom hooking members have been found to be capable of withstanding greater shear forces, however the destruction of the loop members by the mushrooms hooking members was more rapid. "The end result of this phenomenon is that the cycle life of the mushroom/loop fastener device is significantly lower than that of the classical hook/loop cycle life." (column 2, lines 22 to 25)

The invention disclosed in document D2 seeks to overcome these disadvantages. This is accomplished using the aforementioned loop and pancake-type fasteners.

From the foregoing it is apparent that the teaching given there, the replacement of loop and hook-type and loop and mushroom-type fasteners by loop and pancake-type fasteners, has nothing to do with the claimed teaching, that is the provision of loop and mushroom-type fasteners having a relatively low shear strength

for use in bale wrap kit, in order to cope with the problem of the destruction of the loop members when opening the fastener, and as a result with that of improving the cycle life of such kind of fasteners. It is to be noted that the loop and mushroom type fasteners disclosed in document D2 having a shear strength of 88.8 psi (see table in column 9) are inappropriate for use in a bale wrap kit, because the shear strength should be according to the teaching of the claimed invention lower than 30 psi, when it is desired to avoid the destruction of the loop members by the mushroom hooking members.

Furthermore, it should be observed that prior art document D2 does not address or deal with the problem of fastening bale wrap kits.

Therefore without a retrospective knowledge of the invention it was not possible for a skilled person with the aid of prior art document D2 to arrive at the claimed teaching.

Document D3 relates to a garment or diaper with a loop and mushroom fastener. These garments or diapers generally made of non-woven fibrous materials are in essence disposable products, intended to be used only once and then thrown away. Hence, having regard to this different field of application and the specific requirements related thereto, there is no lead for the skilled person to the use of such type of fasteners with a relatively low shear strength for bale wrapping purposes.

Document D4 relates to traditional loop and

mushroom-type fasteners in general. It is stated that these fasteners have an increased shear strength in comparison with loop and hook-type fasteners (column 1, lines 32 to 39). Thus this document rather leads away from the claimed invention than encouraging the skilled person to make use of such type of fasteners.

4.4 There is thus no disclosure or suggestion of providing a bale wrap kit with a loop and mushroom type fastener having a relatively low shear strength, so as to cope with the problem of the destruction of the loop members by the mushroom hooking members and thus with that of substantially improving the cycle life of that kind of fastener.

In view of this significant technical advantage achieved by the solution claimed in claim 1 for a method and in claim 3 for a bale wrap kit, such solution also cannot be considered as trivial or falling within the normal competence of the skilled person.

5. Therefore, in the Board's judgement, the subject-matter of claim 1 and that of claim 3 involve an inventive step.

Dependent claims 2 and 4, 5 concern particular embodiments of the invention claimed in claims 1 and 3 respectively and thus are likewise allowable.

The description and the drawings also meet the requirements of the convention.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to grant a patent with the following documents:

   Claims 1 to 5, description and drawings (Figures 1 to 4) as submitted during the oral proceedings.

The Registrar: The Chairman:

S. Fabiani F. Gumbel