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**Datasheet for the decision
of 2 December 2016**

Case Number: T 2075/13 - 3.2.07

Application Number: 08834925.3

Publication Number: 2212026

IPC: B02C18/00, B02C18/24

Language of the proceedings: EN

Title of invention:

SHREDDER THICKNESS WITH ANTI-JITTER FEATURE

Patent Proprietor:

Fellowes, Inc.

Opponent:

HSM GmbH + Co. KG

Headword:

Relevant legal provisions:

EPC Art. 56, 123(2), 83

EPC R. 80

RPBA Art. 13(1), 13(3)

Keyword:

Late-filed main request - converging versions of claims
Amendment occasioned by ground for opposition - amendments
allowable (yes)
Sufficiency of disclosure - (yes)
Amendments - added subject-matter (no)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

Catchword:



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Case Number: T 2075/13 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 2 December 2016

Appellant: HSM GmbH + Co. KG
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 26 July 2013 rejecting the opposition filed against European patent No. 2212026 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman G. Patton
Members: V. Bevilacqua
G. Weiss

Summary of Facts and Submissions

I. The appellant (opponent) filed an appeal against the decision to reject the opposition against European patent No. 2 212 026, requesting that the appealed decision be set aside and that the patent be revoked.

The opposition was based on the ground of Article 100(b) EPC (lack of disclosure) and on those of Article 100(a) EPC (lack of novelty and lack of inventive step).

II. The present decision is based on the following prior-art documents cited in the decision under appeal:

D1: WO-A-2007/109753;
D2: WO-A-2007/122364; and
D3: JP-A-07-299377.

III. In the annex to the summons to oral proceedings the board presented its preliminary opinion that, *inter alia*:

- the ground of Article 100(b) EPC did not hold against the main request;
- the subject-matter of claims 1 and 8 of the main request lacked novelty both over the content of the disclosure of D1 and over the content of the disclosure of D2; and
- claims 1 and 8 of the first auxiliary request contravened the requirements of Article 123(2) EPC.

IV. With letter of 7 November 2016 the respondent (patent proprietor) maintained its main request, replaced the previously submitted auxiliary request with a new first auxiliary request, and submitted a second and a third auxiliary request. With letter of 28 November 2016 the

respondent further submitted a fourth auxiliary request.

- V. Oral proceedings, during which the respondent submitted a new fourth auxiliary request, were held on 2 December 2016.

For the further course of the oral proceedings, in particular the issues discussed with the parties, reference is made to the minutes.

The appellant confirmed its opening requests that the decision under appeal be set aside and that the European patent be revoked.

The respondent requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the claims of the fourth auxiliary request and an adapted description both filed at the oral proceedings, renamed as (sole) **main request**.

All the respondent's other requests were withdrawn.

- VI. The text of independent **claim 1 of the main request** reads as follows (additional features with respect to the combination of claims 1, 2 and 3 of the application as originally filed, also corresponding to the combination of claims 1, 2 and 3 of the patent as granted, are in bold; emphasis added by the board):

"A method for operating a shredder (10) comprising a housing (14) having a throat (36) for receiving at least one article to be shredded, a thickness detector (100) for detecting a thickness of the at least one article to be shredded inserted in the throat, and a

shredder mechanism (16) received in the housing and including an electrically powered motor (18) and cutter elements (19), the shredder mechanism enabling the at least one article to be shredded to be fed into the cutter elements and the motor being operable to drive the cutter elements in a shredding direction so that the cutter elements shred the articles fed therein; the method comprising:

detecting with the thickness detector, **when the motor is off**, a thickness of the at least one article to be shredded inserted into the throat;

if the detected thickness is less than a predetermined maximum thickness threshold, operating the motor to drive the cutter elements in the shredding direction to shred the at least one article;

if the detected thickness is at least the predetermined maximum thickness threshold, not operating the motor such that the motor stays off;

thereafter, during the operation of the motor, detecting with the thickness detector the thickness of the at least one article inserted into the throat;

characterised by performing a predetermined operation if the detected thickness exceeds a flutter threshold, the flutter threshold being higher than the predetermined maximum thickness threshold

and is set using a predetermined value;

wherein the predetermined operation includes:

a) preventing the motor from driving the cutter elements in the shredding direction; and

b) indicating a signal to the user of the shredder."

The text of independent **claim 6 of the main request** reads as follows (additional features with respect to the combination of claims 19, 20 and 21 of the application as originally filed, also corresponding to the combination of claims 8, 9 and 10 of the patent as granted, are in bold; emphasis added by the board):

"A shredder (10) comprising:

a housing (14) having a throat (36) for receiving at least one article to be shredded;

a shredder mechanism (16) received in the housing and including an electrically powered motor (18) and cutter elements (19), the shredder mechanism enabling the at least one article to be shredded to be fed into the cutter elements and the motor being operable to drive the cutter elements in a shredding direction so that the cutter elements shred the articles fed therein;

a thickness detector (100) configured to detect, **when the motor is off**, a thickness of the at least one article to be shredded being received by the throat; and

a controller (200) coupled to the motor and the thickness detector, the controller being configured

a) to operate the motor to drive the cutter elements to shred the at least one article, if the detected thickness is less than a predetermined maximum thickness threshold;

b) not to operate the motor such that the motor stays off if the detected thickness is at least the predetermined maximum thickness threshold;

c) to detect with the thickness detector the thickness of the at least one article being inserted into a throat of the shredder during the operation of the motor and characterised in that the controller is configured

d) to perform a predetermined operation if the thickness detected during operation of the motor exceeds a flutter threshold, the flutter threshold being higher than the predetermined maximum thickness threshold;

wherein the controller is configured to set the flutter threshold higher than the predetermined thickness threshold using a predetermined value;

wherein the controller is configured to perform the predetermined operation by

(a) preventing the motor from driving the cutter elements in the shredding direction, and (b) indicating a signal to the user of the shredder."

VII. Insofar as relevant to the present decision, the appellant argued substantially as follows:

The main request was late-filed and should not be admitted into the proceedings as it re-introduced unforeseen issues in the discussion at the oral proceedings, because its subject-matter could not be regarded as a convergent development from the subject-matter of the auxiliary requests submitted with the letter of 7 November 2016.

It was not apparent which ground for opposition might have occasioned the amendments contained in the main request, such that the requirements of Rule 80 EPC were not satisfied.

The features taken from the description and added to independent claims 1 and 6 of the main request were present in the embodiments (method and shredder) of figures 6-9 of the original disclosure. However, many other essential features of those embodiments, for example the infrared sensor (150) and its operation, the diagnostic tests (see box 312 in figure 6) or the parallel control process (400, depicted at figure 9 and described in paragraph [64]), had been omitted from the claims of the main request, contravening the requirements of Article 123(2) EPC.

The maximum thickness threshold was associated in the contested patent, paragraph [36], column 7, lines 5-9, with the absolute shredding capacity of the shredder, but according to paragraphs [60] and [61] an object was shredded even if its thickness, measured during shredding, was above the predetermined maximum thickness threshold, provided that it was less than a flutter threshold.

Due to this contradiction a skilled reader was unable to make technical sense out of the patent in suit and to carry out the claimed inventions, contrary to the requirements of Article 83 EPC.

According to the description of the patent in suit, if a user inserted additional paper in the throat after shredding had started and if – as a result of that insertion – the detected and actual thickness exceeded

the flutter threshold, the motor was prevented from driving the cutter elements.

If some paper was then removed, thereby reducing the detected and actual thickness below the flutter threshold, the motor was restarted to shred the remaining paper, which however might now have a thickness above the maximum thickness threshold.

As the shredder also operated above the maximum thickness threshold, the only interpretation of the expression "maximum thickness threshold" on the basis of which a comparison with the prior art could be carried out was that it was merely a threshold below which the shredder operated and above which operation was still possible.

The "first predetermined thickness" mentioned in D1 therefore corresponded to the claimed "predetermined maximum thickness threshold" of the claims.

Based on this interpretation of the claim the only distinguishing feature over the content of the disclosure of D1 was that the motor stayed off when the detected thickness was at least the predetermined maximum thickness threshold.

This feature had the effect of blocking the shredder, and solved the problem of avoiding overloading of its mechanical components.

No inventive step should be acknowledged for this feature on the basis of the knowledge of a skilled person, because blocking the motor operating a machine when it was overloaded, in order to avoid damage to the

machine, was common practice in the field of mechanical engineering.

No inventive step should be acknowledged for this feature on the basis of the teaching of D3 either. D3 described controlling the operation of a motor used in a shredder using a thickness sensor, and taught that to ensure proper functioning of said shredder the motor was turned off, and stayed off, when the detected thickness reached a predetermined maximum thickness threshold.

VIII. Insofar as relevant to the present decision, the respondent argued substantially as follows:

The main request was a convergent development from the subject-matter of the former fourth auxiliary request submitted with letter of 28 November 2016 and should therefore be admitted into the proceedings, even if filed late.

Claims 1 and 6 had been restricted to overcome the patentability objections (Article 100(a) EPC) raised by the appellant on the basis of documents D1-D3, and therefore the requirements of Rule 80 EPC were satisfied.

The position of the appellant that the disclosure was not sufficiently clear and complete for it to be carried out by a skilled person, such that the requirements of Article 83 EPC were not satisfied, should not be followed by the board.

That was because the appellant had misunderstood paragraphs [60] and [61] of the description, as they

related to steps that could occur only after commencement of the shredding operation.

Prior to detecting the thickness of an article to be shredded, the motor was off: shredding started only if the initially detected thickness was below the predetermined maximum thickness threshold.

The predetermined maximum thickness threshold was therefore set by the skilled person at a level which ensured safe operation, i.e. below the capacity of the shredder.

The flutter threshold was provided as a tolerance to accommodate the fluttering motion of an article whose thickness was below the predetermined maximum thickness threshold before shredding, and therefore it had to be greater than the predetermined maximum thickness threshold.

The patent in suit did not teach that a shredding operation occurred when the thickness detected at the beginning was above the predetermined maximum thickness threshold but below the flutter threshold.

Claims 1 and 6 of the main request were based on original claims 3 and 21, and further contained features disclosed in the passages of description as originally filed corresponding to figures 6-9. These features were not structurally or functionally linked to the other features of the embodiment of said figures 6-9. The requirements of Article 123(2) EPC were therefore also satisfied.

The appellant had misunderstood D1 and formulated its inventive step objection by referring to an incorrect interpretation of the claim.

D1 defined two thickness thresholds. Only the higher one, namely the "second predetermined thickness", avoided the start of a shredding operation by cutting off power to the shredder mechanism. This "second predetermined thickness" therefore corresponded to the predetermined maximum thickness threshold of the claims of the patent in suit.

The distinguishing feature of both independent claims of the main request over D1 was that a flutter threshold higher than the predetermined maximum thickness threshold was provided.

The technical effect was that a margin of tolerance was provided to allow the shredding operation to continue when fluttering of the article that was being shredded occurred and an "apparent thickness" was detected which was above the predetermined maximum thickness threshold.

The problem to be solved was defined as how to prevent unnecessary shut-off of the shredding operation.

The claimed solution did not belong to the skilled person's common general knowledge.

D1 did not provide any teaching in this respect as there was no hint at all in that document to prevent unnecessary shut-off of the shredding operation.

The same applied to D3. As a consequence, when combining the teachings of D1 with D3, there would be

no motivation for the skilled person to incorporate a flutter threshold.

Reasons for the Decision

1. Admissibility of the main request

1.1 According to the appellant, the main request should not be admitted because its subject-matter cannot be considered as a convergent development from the subject-matter of the first to third auxiliary requests submitted in preparation for oral proceedings (with letter of 7 November 2016).

1.2 The board disagrees.

The subject-matter of the independent claims of the main request constitutes an amendment to the proprietor's case in the sense of Article 13 RPBA. As such, its admission is subject to the board's discretion as defined therein.

The features taken from the description and introduced in independent claims 1 and 6 with respect to combinations of claims of the patent as granted are indicated in bold under point VI above.

These features ("motor is off"; "motor stays off") relate to the issue whether the motor can already be running during thickness measurement or rather is **started** as a reaction to a thickness which is below the predetermined maximum thickness threshold. This was already central in the appealed decision (see points 2.3, 3.1.2 and 4.2.3), as well as in the statement setting out the grounds of appeal and in the reply thereto.

Further, as argued by the respondent at the oral proceedings, the subject-matter of the main request is also a clearly convergent development from the subject-matter of the withdrawn fourth auxiliary request submitted with letter of 28 November 2016. In fact, the amendments relate to an attempt to clarify the expressions "not operating the motor" and "to not operate the motor" which were included in claims 1 and 6, respectively, of said withdrawn fourth auxiliary request, and are a direct reaction to the discussion conducted at the oral proceedings.

As a result, the main request is clearly convergent with former withdrawn requests and does not raise any new issues which would extend beyond the framework of what has already been discussed in writing or orally. The oral proceedings do not need to be adjourned to deal with the main request.

In view of these considerations the board decides to admit the main request.

2. Rule 80 EPC

The appellant argues that the requirements of Rule 80 EPC are not met, because it is not apparent which ground for opposition has occasioned the amendments contained in the main request.

The board disagrees.

Claims 1 and 6 have been restricted in order to exclude embodiments in which the motor is running before thickness measurement starts.

These amendments are clearly an attempt to overcome the patentability objections (Article 100(a) EPC) raised by the appellant on the basis of documents D1-D3.

Therefore, the board concurs with the respondent that the requirements of Rule 80 EPC are satisfied.

3. Sufficiency of disclosure

3.1 The appellant argues that a skilled person would be unable to carry out the invention claimed in claims 1 and 6 of the main request, because the description provides contradictory indications (in paragraphs [36] and [60]-[61] of the contested patent respectively) with respect to the meaning of the expression "maximum thickness threshold" used in the claims. The "maximum thickness threshold" does not appear to be the "maximum" one since, according to paragraphs [60]-[61], the shredder can still be operated above said "maximum", contrary to the teaching of paragraph [36].

3.2 The board disagrees.

As put forward by the appellant, the predetermined maximum thickness threshold **is associated** in paragraph [36], column 7, lines 5-9, with the absolute shredding capacity of the shredder, by stating that if the article is too thick for the capacity of the shredder mechanism (i.e. above said predetermined level) the control system prevents the shredder from operating.

However, the skilled person reading this passage does not understand from it that the predetermined maximum thickness threshold necessarily **corresponds to** the absolute shredding capacity of the shredder, such that no operation at all can be started above this thickness

without damaging the apparatus, but rather that the predetermined value is associated in the sense that it has to be lower than that to provide a safety margin, because the provision of such a safety margin is usual practice in mechanical design.

According to paragraphs [60] and [61], if a user inserts additional paper in the throat after the shredding has started and if – as a result of that insertion – the detected and actual thickness exceeds the flutter threshold, the motor is prevented from driving the cutter elements.

If some paper is removed, thereby reducing the detected and actual thickness below the flutter threshold, the motor is restarted to shred the remaining paper, which however now has a thickness above the maximum thickness threshold.

This confirms that the predetermined maximum thickness threshold is not the absolute shredding capacity of the shredder, but is rather a threshold above which (*a fortiori* also below which) if the motor is started the shredder can still operate.

The flutter threshold, on the other hand, is used, as also explained in paragraphs [60] and [61], only to decide whether the operation that has already started can safely continue like that, because for example the increase in the measured thickness is due to fluttering and can be tolerated, or whether further measures as defined in claims 1 and 6 have to be taken.

This explains why according to the patent in suit an object is shredded even if the thickness measured during shredding is above the predetermined maximum

thickness threshold, provided that it is less than the flutter threshold.

For the above reasons the board judges that the disclosure is sufficiently clear and complete for the invention according to claims 1 and 6 to be carried out by a skilled person (Article 83 EPC).

4. Compliance with the requirements of Article 123(2) EPC

The appellant argues that the subject-matter of independent claims 1 and 6 of the main request extends beyond the content of the original disclosure.

The board disagrees, for the following reasons discussed at the oral proceedings.

4.1 Claim 1

4.1.1 Claim 1 is based on claim 3 of the application as originally filed (corresponding to claim 3 of the patent as granted), to which the following method steps/features have been added (see point VI above):

(a) that the step of detecting with the thickness detector a thickness of the at least one article to be shredded inserted into the throat is performed

when the motor is off;

(b) that, if the detected thickness is at least the predetermined maximum thickness threshold, the motor stays off and is not operated,

4.1.2 Features (a) and (b) are based on the embodiment of paragraphs [50]-[62] of the description as originally

filed (reference is made to the PCT publication WO 2009/046113 A2, see also figures 6-9).

According to paragraph [53] the method has a preparatory phase during which the motor is not (yet) operating, which is followed by a thickness measurement phase, described at the beginning of paragraph [54] (feature (a), see box 310 in figure 6).

Paragraph [54] also explains that, if the determined thickness is at least the predetermined thickness threshold, the motor stays off (feature (b), see boxes 318 in figure 6 and 324 in figure 7).

Hence, features (a) and (b) are disclosed together in combination with other features in an embodiment. Thus, their combination with the subject-matter of original claim 3 constitutes an intermediate generalisation.

- 4.1.3 The appellant argues that according to paragraph [52] the motor can be activated in the reverse direction if the infrared sensor 150 detects the presence of an object in the throat when the machine is powered up. The presence and function of this sensor would be inextricably linked to feature (a) and so should also be included in claim 1.

The board disagrees, because feature (a) requires only that the step of detecting with the thickness detector a thickness of the at least one article to be shredded inserted into the throat (box 318 in figure 6) is performed when the motor is off (box 310 in figure 6), and this condition is **always satisfied** in the originally disclosed method, independently of the output of the sensor 150. The step the appellant refers to concerns step 304 (see also paragraph [51]), which

is anterior and unrelated to step 310, from which the claimed method starts.

- 4.1.4 The appellant also argues that according to box 320 (figure 7), once the detected thickness is below the predetermined maximum thickness, the output of infrared sensor 150 still has an influence on the decision to operate the motor. On that basis, it considers that the presence and function of the sensor 150 is also inextricably linked to feature (b) and so said step 320 should be included in the method claim.

The board disagrees again.

Feature (b), shown in box 318 of figure 6, requires only that if the detected thickness is at least the predetermined maximum thickness threshold, the motor stays off and is not operated. This feature (b) does not envisage that the motor has to be started if the thickness is below the predetermined maximum thickness threshold, i.e. is not linked to the following steps specified in figure 7. It is hence neither functionally nor structurally linked to the following step 320.

- 4.1.5 The appellant then argues that the outcome of the diagnostic tests (box 312, paragraph [55]) is also inextricably linked to features (a) and (b), because it is a precondition for operating the motor. This step/feature of the embodiment should also be included in claim 1.

The board disagrees again, because based on the original disclosure the outcome of the tests, be they negative or positive, may prevent operation, but does not change the fact that the step of detecting with the thickness detector a thickness of the at least one

article to be shredded inserted into the throat is performed **when the motor is off** (feature (a)) **and that**, if the detected thickness is at least the predetermined maximum thickness threshold, the motor stays off and is not operated (feature (b)). Box 312 hence has no influence on how features (a) and (b) are to interact.

- 4.1.6 The appellant argues that the expression "turned off" in the second line of paragraph [53], which is the basis for features (a) and (b), is an indication that the motor was "on" before. Since this preliminary status of the motor being "on" is missing from claim 1, the subject-matter has been extended beyond the content as originally filed.

The board cannot share this view for the reason put forward by the respondent that said expression may cover both possibilities, i.e. that the motor was "on" or "off" before. In any case, this does not play a role since the method of claim 1 starts from step 310 (motor "off"), such that the status of the motor before that starting point has no influence on the following claimed steps and, hence, is irrelevant for Article 123(2) EPC.

- 4.1.7 Further, the method (400) specified in paragraph [50] and shown in figure 9 runs parallel to the method described in figures 6 and 7 with which claim 1 is concerned (see line "A" between boxes 302 and 304 in figure 6, representing the starting point in figure 9). Hence, this method (400) is neither functionally nor structurally linked to the method shown in figures 6 and 7, i.e. to features (a) and (b) introduced in claim 1. Therefore, contrary to the appellant's view, said method (400) does not need to be introduced in claim 1

in order to comply with the requirements of Article 123(2) EPC.

- 4.1.8 According to the appellant, paragraph [54], column 13, of the contested patent discloses that the method is cyclic in the sense that it returns to box 310 in case the thickness of the paper to be shredded is above the predetermined maximum thickness (box 318). Since this is not reflected in claim 1, the requirements of Article 123(2) EPC are not be fulfilled.

The board cannot share this view since, as put forward by the respondent, claim 1 is limited to one cycle, i.e. does not exclude that the corresponding steps of the claimed method are repeated. There is hence no need to specify the return to box 310 in claim 1.

- 4.1.9 The above discussion shows that features (a) and (b) added to original claim 3 are not functionally or structurally linked to the other features of the embodiment with which they are disclosed. The requirements of Article 123(2) EPC are therefore satisfied.

4.2 Claim 6

Claim 6 is based on claim 21 of the application as originally filed (corresponding to claim 10 of the patent as granted), to which the following features have been added (see point VI above):

- (c) that the thickness detector is configured to detect, **when the motor is off**, a thickness of the at least one article to be shredded being received by the throat;

- (d) that the controller is configured **not to operate the motor such that the motor stays off if the detected thickness is at least the predetermined maximum thickness threshold.**

The appellant argues that the requirements of Article 123(2) EPC are not satisfied by submitting in relation to features (c) and (d) arguments which in substance correspond to those already submitted in relation to features (a) and (b) discussed above.

The board notes that the limitations implied by features (c) and (d) correspond in substance to those implied by features (a) and (b), and concludes that the subject-matter of claim 6 of the main request does not extend beyond the content of the original disclosure, for the same reasons as those already given above in relation to claim 1.

5. Claim 1 - novelty

The subject-matter of claim 1 is novel since none of the available prior-art documents discloses in combination all the features of claim 1. This has not been contested by the appellant.

6. Claim 1 - inventive step

The appellant has contested that the subject-matter of claim 1 involves an inventive step starting from D1 as closest prior art in combination with the skilled person's common general knowledge and/or in view of the teaching of D3.

6.1 Content of the disclosure of D1

6.1.1 D1 (see in particular figures 10-12 and claim 43) discloses a method for operating a shredder comprising a housing (514, see figure 10) having a throat (536) for receiving at least one article to be shredded, a thickness detector (600, see figure 12) for detecting a thickness of the at least one article to be shredded inserted in the throat and a shredder mechanism (516, see again figure 12) received in the housing and including an electrically powered motor and cutter elements (see claim 43), the shredder mechanism enabling the at least one article to be shredded to be fed into the cutter elements and the motor being operable to drive the cutter elements in a shredding direction so that the cutter elements shred the articles fed therein (see again claim 43).

This method therefore comprises the step of:

detecting with the thickness detector a thickness of the at least one article to be shredded inserted into the throat (see claim 43).

Paragraph [79] (see last three lines of page 16) explains that if the thickness of the item to be shredded is detected to be greater than the "second predetermined thickness" (see also last three lines of paragraph [78]), power is cut off, i.e. the motor is off.

D1 therefore discloses that a condition for having the motor "on" and starting shredding is that the detected thickness is less than the "second predetermined thickness". Hence, the "second predetermined thickness"

of D1 corresponds to the "predetermined maximum thickness" of claim 1.

The method disclosed in D1 comprises the step of performing a predetermined operation (switching a red light, see the last two lines of paragraph [78], or cutting off power, as explained in the last three lines of paragraph [79]) if the detected thickness exceeds one of the thickness thresholds referred to in these paragraphs.

- 6.1.2 The appellant holds the view that, according to the description of the patent in suit, if a user inserts additional paper in the throat after shredding has started and if – as a result of that insertion – the detected and actual thickness exceeds the flutter threshold, the motor is prevented from driving the cutter elements.

If some paper is then removed, thereby reducing the detected and actual thickness below the flutter threshold, the motor is restarted to shred the remaining paper, which however may now have a thickness above the maximum thickness threshold.

Since operating the shredder above the maximum thickness threshold is possible, the appellant argues that the only possible interpretation of the expression "predetermined maximum thickness threshold" of claim 1 on the basis of which a comparison with the prior art could be carried out is that it is merely a threshold below which the shredder operates and above which operation is still possible.

Therefore the "first predetermined thickness" mentioned in D1 (see paragraph [78]) corresponds to the

predetermined maximum thickness of the claims under discussion.

Based on this interpretation the only distinguishing feature over the content of the disclosure of D1 is therefore that the "motor stays off" if the detected thickness is at least the predetermined maximum thickness threshold.

- 6.1.3 The board cannot share this view for the following reasons given by the respondent at the oral proceedings. According to the established case law (see Case Law of the Boards of Appeal, 8th edition 2016, II.A.6.3.1 and II.A.6.3.3), the description can be used as the patent's "dictionary" to assess the correct meaning of ambiguous terms used in claims.

However, if a term used in a claim is clear to a skilled person, the description cannot be used to interpret such a term in a different way.

This clearly applies to the feature of claim 1 "if the detected thickness is at least the predetermined maximum thickness threshold, not operating the motor such that the motor stays off".

In this case the meaning of this unambiguous statement can only be interpreted as it would be understood by the person skilled in the art without the help of the description. This implies that the predetermined maximum thickness threshold can only be a thickness parameter used by the machine controller, above which the motor of the shredder **does not start**.

The "second predetermined thickness" of D1 therefore corresponds to the "predetermined maximum thickness" of the claims under discussion.

6.2 Differences

In view of the above, D1 fails to disclose the features of the characterising portion of claim 1 related to the flutter threshold, i.e. the step of:

performing a predetermined operation if the detected thickness exceeds a flutter threshold, the flutter threshold being higher than the predetermined maximum thickness threshold, and is set using a predetermined value;

wherein the predetermined operation includes:

- a) preventing the motor from driving the cutter elements in the shredding direction; and
- b) indicating a signal to the user of the shredder.

6.3 Effect - problem to be solved

This feature implies that shredding is carried out also when the thickness detected during the shredding operation is more than the thickness measured before operation was started, provided that this flutter threshold is not reached.

This has the effect that as long as the increase is so small that it can be associated with fluttering, the controller does not intervene in the ongoing shredding operation.

This solves the problem of preventing unnecessary shut-off of the shredder (see paragraph [55] of the patent in suit) because an increase in the measured thickness due to fluttering is merely due to cutting stresses and deformations and does not correspond to a real increase in the article's thickness.

6.4 Discussion of inventive step

6.4.1 D1 alone

According to the appellant no inventive step should be acknowledged for this feature on the basis of the knowledge of a skilled person, because blocking the motor operating a machine in order not to overload it is common practice in the field of mechanical engineering, as illustrated for instance by D3, see for instance PAJ abstract.

The board disagrees.

As D1 does not mention fluttering at all, the skilled person is not in a position to extract from this document any indication towards solving this problem in the same way as claim 1 of the main request does.

The skilled person is also not in a position to solve this problem in the same way as claim 1 does by applying his knowledge, because even if it may be assumed that, as fluttering inevitably occurs during shredding, he has knowledge of this phenomenon, still there is no evidence on file that using a flutter threshold as in the claims of the main request was also known to him as a solution to the problem formulated above. D3 provides no such disclosure either (see also below).

6.4.2 Combination of the teachings of D1 and D3

The appellant also argues that the combination of the teachings of documents D1 and D3 is detrimental to the inventive step of the subject-matter of claim 1 of the main request.

The board disagrees.

By explicitly mentioning it (see paragraph [1]: "in a shredder"), D3 discloses a method for operating such a device. A housing having a throat for receiving at least one article to be shredded is inevitably and therefore implicitly disclosed as soon as a shredder is mentioned.

D3 also discloses a thickness detector (element 50, see paragraph [7]) for detecting a thickness of the at least one article to be shredded inserted in the throat and a shredder mechanism (called cutting part, see paragraph [6]) received in the housing and including an electrically powered motor and cutter elements (as is always the case in this type of device), the shredder mechanism enabling the at least one article to be shredded to be fed into the cutter elements and the motor being operable to drive the cutter elements in a shredding direction so that the cutter elements shred the articles fed therein.

The method disclosed in D3 comprises (PAJ abstract):

detecting with the thickness detector a thickness of the at least one article to be shredded inserted into the throat (as explained in paragraphs [7], [20] and [22]).

On the basis of the detected thickness, the conveying rolls 26 and 43 are operated in order to convey the article 16 towards or away from the cutter elements.

D3 does not disclose a flutter threshold in the sense of claim 1 of the main request, i.e. a threshold being higher than the threshold used to start operating the motor.

D3 does not provide any information from which the conclusion could be drawn that the motor is operated to drive the cutter elements in the shredding direction as a consequence of the thickness measurement.

The controller described in D3 is not coupled to the motor driving the cutter elements, but to the motor driving the supplying rolls.

As a consequence, D3 teaches that if the thickness increases above a predetermined threshold an action reducing the amount of paper sent by the feeding means (rolls 26 and 43) to the cutting elements is necessary.

D3 does not teach that in the case of excessive thickness the controller of the motor of the cutting elements should intervene by performing a predetermined operation.

6.4.3 In view of the above, the subject-matter of claim 1 involves an inventive step.

7. Claim 6 - novelty

The subject-matter of claim 6 is novel since none of the available prior-art documents discloses in

combination all the features of claim 6. This has not been contested by the appellant.

8. Claim 6 - inventive step

D1 discloses (see again figures 10-12 and claim 1) a shredder comprising:

a housing having a throat (536) for receiving at least one article to be shredded;

a shredder mechanism (516) received in the housing and including an electrically powered motor (518) and cutter elements, the shredder mechanism enabling the at least one article to be shredded to be fed into the cutter elements and the motor being operable to drive the cutter elements in a shredding direction so that the cutter elements shred the articles fed therein;

a thickness detector (600, see figure 12) configured to detect a thickness of the at least one article to be shredded being received by the throat; and a controller (700) coupled to the motor and the thickness detector, the controller being configured

a) to operate the motor to drive the cutter elements to shred the at least one article if the detected thickness is less than a predetermined maximum thickness threshold (see for instance "first predetermined thickness" and "second predetermined thickness" in paragraphs [78] and [79]);

b) to not operate the motor such that the motor is off if the detected thickness is at least the "second predetermined thickness";

c) to detect with the thickness detector the thickness of the at least one article being inserted into a throat of the shredder during the operation of the motor (D1 does not provide any information from which it can be inferred that the detection is performed only before operation starts);

the controller being configured

d) to perform a predetermined operation (switching lights on or off, cutting off power) if the thickness detected during operation of the motor exceeds one of the thickness thresholds referred to in paragraphs [78] and [79].

However, as already discussed in relation to claim 1 (see points 6.1 and 6.2 above), D1 fails to disclose the following features of claim 6 of the main request:

that the controller is configured to perform a predetermined operation if the thickness detected **during operation** of the motor exceeds a **flutter threshold**, the flutter threshold being higher than the predetermined maximum thickness threshold (the latter being the threshold on the basis of which the decision to start shredding is taken);

and

that the controller is configured to set the flutter threshold higher than the predetermined thickness threshold using a predetermined value;
wherein the controller is configured to perform the predetermined operation by preventing the motor from driving the cutter elements in the shredding direction, and indicating a signal to the user of the shredder.

The board notes that these distinguishing features correspond in substance to those already discussed for claim 1 vis-à-vis D1, and that the lack of inventive step objections raised by the appellant against claim 6 also correspond *mutatis mutandis* to those raised against claim 1.

The board therefore concludes that the subject-matter of claim 6 of the main request involves inventive step for the same reasons as those already discussed above in relation to claim 1 of the main request.

9. Description

The appellant has not raised any objections against the adapted description filed during the oral proceedings, and the board has no reason to see matters otherwise.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent in amended form with the following documents:
 - claims 1 to 11 of the main request filed at the oral proceedings;

 - description: pages 2 to 9 filed at the oral proceedings;

 - figures 1 to 9 as granted.

The Registrar:

The Chairman:



G. Nachtigall

G. Patton

Decision electronically authenticated