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Datasheet for the decision of 30 September 2015

Case Number: T 0121/12 - 3.2.03

Application Number: 01908121.5

Publication Number: 1210993

IPC: B21B45/02

Language of the proceedings: EN

Title of invention:
DEVICE AND METHOD FOR COOLING HOT ROLLED STEEL BAND AND METHOD OF MANUFACTURING THE HOT ROLLED STEEL BAND

Patent Proprietor:
JFE Steel Corporation

Opponent:
SMS group GmbH

Headword:

Relevant legal provisions:
EPC Art. 54, 56, 83, 123(2)

Keyword:
Novelty - (yes)
Inventive step - auxiliary request (yes)
Sufficiency of disclosure - (yes)
Amendments - added subject-matter (no)

Decisions cited:

Catchword:

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Case Number: T 0121/12 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 30 September 2015

Appellant: (Opponent)	SMS group GmbH Eduard-Schloemann-Strasse 4 40237 Düsseldorf (DE)
Representative:	Bendel, Christian European Patent Attorney Hermann-Harry-Schmitz-Straße 22 40227 Düsseldorf (DE)
Respondent: (Patent Proprietor)	JFE Steel Corporation 2-3, Uchisaiwai-cho 2-chome Chiyoda-ku Tokyo, 100-0011 (JP)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 23 November 2011 concerning maintenance of the European Patent No. 1210993 in amended form.**

Composition of the Board:

Chairman	G. Ashley
Members:	C. Donnelly
	E. Kossonakou

Summary of Facts and Submissions

I. The appeal lies from the intermediate decision of the opposition division maintaining European patent No. 1 210 993 in amended form.

In its decision, the opposition division held that the subject-matter of the independent claim 1 as granted met the requirements of the EPC, but that the subject-matter of the independent method claim 7 infringed Article 123(2) EPC. Consequently, the patent was maintained in amended form on the basis of the auxiliary request in which the method claims 7 to 9 as granted had been deleted.

II. The opponent (hereinafter: the "appellant") lodged an appeal against this decision in due form and time.

III. State of the art.

In support of its case the appellant referred to the following documents, which had been cited in the contested decision:

D1: US-A-4 132 393;
D2: US-A-4 826 138;
D3: JP-A-9201614; together with a computer generated translation of the description of the exemplary embodiments as well as the description of the figures (translation by the Internet service of the Japanese patent office);
D4: JP-U-57-82407;
D5 S. Willmotte, P. Simon, "Refroidissement ultrarapide de bandes minces laminées à chaud" (1997), Amt für Amtl. Veröffentlichen der EG, Luxembourg, ISBN 92-828-0757-6;

D6: A. de Paepe, P. Simon, J. Moerkerke, J. C Herman "Control of the temperature of the bar on entry to the finisher"; Advanced Hot Rolling Practice and Products. Joint ECSC Steel /NEST Workshop, 2000, page 38 to 47, Düsseldorf: Verein Deutsche Eisenhüttenleute (VDEh)
D7: EP 0 541 574 A1;
D8: WO 99/30849;
D8': German translation of D8;
D9: US-A-5 950 476.

IV. The board informed the parties of its provisional opinion in a communication dated 31 August 2015 pursuant to Articles 15(1) and 17(2) RPBA.

V. Oral proceedings were held on 30 September 2015. At the close of debate the parties confirmed their requests as follows:

The appellant requested that the decision under appeal be set aside and that European Patent No. 1 210 993 be revoked.

The patent proprietor (hereinafter: the "respondent") requested that the appeal be dismissed, subsidiarily that the patent be maintained on the basis of the auxiliary request filed during the oral proceedings.

VI. Both parties referred to the following feature analysis of claim 1 as granted (and intended to be maintained):

1.1. An apparatus for cooling a hot rolled steel strip;
1.2 the apparatus comprising a transfer means arranged at a runout table (3);

1.3 the runout table is located behind a final finishing mill (2E) at a manufacturing equipment for a hot rolled strip (13);
1.4 the transfer means comprises a plurality of transfer rolls (11) located at the specified interval for transferring the hot rolled strip (13);
1.5 the apparatus has at least one upper surface cooling means, arranged at an upper surface side of the transfer means,
1.5.1 the upper surface cooling means are for cooling the hot rolled steel strip (13) by ejecting cooling water to an upper surface of the hot rolled steel strip;
1.6 the apparatus has at least one lower surface cooling means (12,35), arranged at a lower surface side of the transfer means relative to the upper cooling means (14,37) and the hot rolled steel strip (13) to be transferred;
1.6.1 the lower surface means are for cooling the hot rolled steel strip (13) by ejecting cooling water to the lower surface of the hot rolled steel strip;
1.7 the upper surface cooling means (14,37) moves freely up and down;
1.8 the upper surface cooling means has a water breaking means (16,28,30) at least at an inlet side or an outlet side of the cooling apparatus;
1.9 the water breaking means (16,28,30) is at a position just above the transfer roll (11) in parallel with the transfer roll (11) and with a clearance to the steel strip (13);

characterised by

1.10 the apparatus has a pair of pinched rolls (55);

1.10.1 the pinched rolls are just after the inlet and/ or outlet sides of the cooling apparatus and/or at the half way of cooling;
1.11 the steel strip (top) is then released from a pair of the pinch rolls (55) at the upstream side sequentially concurrently with reaching a tension giving means, such as a pair of pinch rolls (55) at the downstream side or the coiler."

Claim 1 according to the auxiliary request is identical to claim 1 of the main request except that feature 1.11 has been amended to read:

"1.11 the steel strip top is then released from a pair of the pinch rolls (55) at the upstream side sequentially concurrently with reaching a tension giving means in the form of a coiler."

The submissions of the parties relevant to the decision can be summarised as follows:

VII. Appellant's case

a) Claim 1 as granted

Added subject-matter, Art. 100(c), 123(2) EPC

Feature 1.8 now claims the alternative "...has a water breaking means at least at an inlet side or an outlet side...".

However, claim 1 as originally filed only referred to "an outlet side". Dependent claim 10 as filed specified water breaking means "...at an inlet, or outlet or inlet and outlet". The term "inlet side" is of a broader scope than "inlet" since it refers to all of

the apparatus upstream of the cooling region, whereas "inlet" just refers to the zone immediately next to the entry into the cooling region.

Insufficient disclosure, Art 100(b), Art. 83 EPC

Feature 1.8 cannot be carried out by the skilled person, since the skilled person is not taught how to place the water breaking means at a large distance upstream of the cooling region.

Invalid priority

The priority date of the patent is not valid for the granted claims.

Novelty, Art. 100(a), Art. 54 EPC

The subject-matter of claim 1 is not new with respect to D1, D3, D5 and D8.

Inventive step, Art 100(a), Art. 56 EPC

The subject-matter of claim 1 is not inventive in view of:

(i) D1 in combination with D9; or

(ii) D8 in combination with D9; or

(iii) D8 in combination with D5; or

(iv) D6 in combination with D1; or

(v) D6 in combination with D3.

In particular, water spray nozzles, such as those disclosed in D1 and D8, constitute water breaking means in the sense of features 1.8 and 1.9.

Feature 1.11 is a purely functional feature and cannot be used to distinguish an apparatus over the prior art.

Consequently, the above combinations of disclosures lead to the claimed subject-matter in an obvious manner.

b) Auxiliary request

Since this request was only filed at the last minute during the oral proceedings it should not be admitted. Its subject-matter does not involve an inventive step in view of either D1 or D8 in combination with D9.

D9 describes an arrangement in which the leading end of the steel strip is released from a pair of the pinch rolls at the upstream side sequentially concurrently with reaching a tension giving means in the form of a coiler (see col. 4, lines 43 to 49). A coiler does not actually become a tension giving means until the strip is wound around the mandrel, and the only sensible technical interpretation of feature 1.11 is that the upstream pinch roll is not released until the coiler is providing tension in the strip, as described in D9.

VIII. Respondent's case

a) Claim 1 as granted

Added subject-matter, Art. 100(c), 123(2) EPC

Original claim 10 refers to both an "inlet" or an "outlet" and original claim 1 refers to an "outlet side" for the same arrangement at the downstream end for the water breaking means. Hence, the term "outlet" and "outlet side" are used synonymously. In view of this, the skilled person would also understand that, in the context of the patent, the terms "inlet side" and "inlet" are essentially synonymous.

Furthermore, the first paragraph on page 32 of the originally filed application (corresponding to paragraph [0139] of the published application) indicates that a water breaking roll is "provided at the inlet side of the cooling apparatus".

Hence, feature 1.8 does not constitute added subject-matter and the requirements of Article 123(2) EPC are met.

Insufficient disclosure, Art 100(b), Art. 83 EPC

Paragraph [0140] of the disputed patent (corresponding to paragraph [0139] of the published application) describes the location of the water breaking means, thereby indicating to the skilled person how to implement feature 1.8 of the invention.

Priority

Apart from D6, none of the prior art documents has a publication date that falls in the interval between the earliest priority and the filing date of the patent. D6 is not relevant since it relates to the cooling of rolled bars upstream of a finishing mill or stand, as opposed to "behind a final finishing mill" as is

defined in the claim. Thus, the issue of priority is not relevant.

Interpretation of the claims

As regards feature 1.10 it is not correct that pairs of rolls made up of a water breaking roll and a transfer roll form a "pair of pinched rolls". Feature 1.9 specifies that there is a clearance between the water breaking means and the steel strip. Since feature 1.11 requires that the steel strip is released from a pair of the pinched rolls at an upstream side sequentially concurrently with reaching a tension giving means, such as a pair of pinch rolls at the downstream side or the coiler, the pair of pinched rolls must apply a tension. If the water breaker is not in contact with the steel strip, this is not possible.

The skilled person understands that the water breaking means specified in claim 1 is not to be interpreted as the water breaking spray nozzle mentioned at paragraph [0146] of the patent, since it is clearly indicated that these water breaking spray nozzles are an "additional feature".

Novelty

D1 does not disclose features 1.9 and 1.11 of claim 1.

D3 does not disclose features 1.8, 1.9 and 1.11

D5 fails to disclose features 1.7,1.8 and 1.9 as well as 1.11

D8 fails to disclose feature 1.11

Feature 1.11 imposes clear structural limitations since the apparatus must be adapted to carry out the required function with the necessary feedback and control mechanisms between the various tension giving means be they pinch-rolls or the coiler.

Inventive step

A combination of D1 or D8 with D9 does not lead to the subject-matter of claim 1, since in the apparatus of D9 the top pinch roll 26 is lifted vertically out from engagement with the top of the strip only once sufficient strip has been wound on the mandrel (see col. 4, lines 43 to 49). According to feature 1.11 of the invention, however, the pinch roll is released at the upstream side sequentially concurrently with the strip *reaching* the coiler, i.e. the pinch roll is released before any of the strip has actually been wound on the mandrel of the coiler.

D8 is a further development of D5, neither of which discloses feature 1.11, so a combination of D8 with D5 would also not lead to the subject-matter of claim 1.

D6 is not relevant since it describes technology relating to the cooling of bar upstream of a finishing mill or stand; it is an unrealistic starting point for assessing the inventive step of the subject-matter of claim 1, which relates to the cooling of steel strips downstream of a finishing mill.

b) Auxiliary request.

Admissibility

This request should be admitted into the proceedings, since it only consists of the deletion of one of the alternatives present in feature 1.11, and is a direct response to the discussions which took place during the oral proceedings. The appellant has already presented arguments and documents relevant to this aspect of claim 1 during the written proceedings.

This request is limited to the tension giving means of feature 1.11 being in the form of a coiler. As outlined in relation to the main request, D9 does not disclose a system in which the pinch roll is released immediately upon the strip reaching the coiler.

By releasing the pinch roll before the strip has been wound on to the mandrel of the coiler, the metallurgical properties of the leading end of the strip are improved since fewer detrimental stresses are applied.

Reasons for the Decision

1. Main request, claim 1 as granted

1.1 Added subject-matter, Art. 100(c), 123(2) EPC

As the respondent has indicated, the first paragraph on page 32 of the originally filed application (corresponding to paragraph [0139] of the published application) discloses a water breaking roll being "provided at the inlet side of the cooling apparatus". Furthermore, in the opinion of the board, the skilled

person would realise that in the context of the patent there is little point in having a water breaking means at a large distance upstream of the cooling region where there is little or no water cooling. Thus, the respondent's argument that the term inlet side is essentially synonymous with the term "inlet" in the context of the patent is correct.

Accordingly, the subject-matter of claim 1 meets the requirements of Article 123(2) EPC.

1.2 Insufficient disclosure, Art 100(b), Art. 83 EPC

The appellant submitted that the patent does not disclose how to provide a water breaking means at the inlet side of the cooling apparatus.

As already reasoned above in connection with added subject-matter, the skilled person would reject the notion of placing the water breaking means at a large distance upstream from the cooling region, since it would be pointless in the absence of any water cooling. Further, paragraph [0140] of the disputed patent (corresponding to paragraph [0139] of the published application) describes the location of the water breaking means, thereby indicating to the skilled person how to achieve this feature of the invention.

Hence, the requirements of Article 83 EPC are met.

1.3 Priority

The board agrees with the respondent that this issue is of no relevance since, apart from D6, none of the prior art documents has a publication date that falls in the interval between the earliest priority and the filing

date of the patent. D6 is not relevant, since it describes technology relating to the cooling of rolled bars upstream of a finishing mill or stand, as opposed to "behind a final finishing mill" as is defined in the claim.

1.4 Novelty, Art. 54 EPC

1.4.1 D1

The board does not accept the appellant's assertion that D1 discloses feature 1.11. Although the upper rolls 24 and lower rolls 34 form pinch rolls (see D1, Figure 1 and column 5, lines 41 to 42), there is no suggestion in D1 that the apparatus is capable of any sequentially concurrently release of these pinch rolls as the strip progresses through the mill.

The appellant has also argued that the top rolls 24 in D1 act as water breaking means, as defined in feature 1.9. However, since these rolls act as pinch rolls, they cannot be spaced from the top of the plate (see col. 8, lines 22 to 36 and col. 10, lines 66 to 68). Thus, it is evident that in normal operation they do not fulfil the requirement specified in feature 1.9 for the water breaking means to be at a position just above the transfer roll and be provided with a clearance relative to the steel strip. It is accepted that the passage at col. 8, lines 26 to 29, referred to by the appellant, indicates that the roll spacing of unemployed cooling units is increased until it is larger than the plate thickness. However, this must be read in the context that the cooling units have been shut down with the intention of reducing the length of the cooling path, and that the unemployed units merely

act as delivery tables (see col. 8, line 29). Since these units play no part in the cooling process when shut down, it is not clearly derivable that they would function as water breaking means.

The drying device 151, 152 of D1 is intended to prevent rust formation (see col. 8, lines 9 to 11) and cannot be construed as a water breaking device, since it only acts to remove and promote evaporation of the small amount of residue water remaining on the upper surface of the strip after the major part has been removed by the passage through the final roll set (see D1, col. 7, line 66 to col. 8, line 13).

1.4.2 D3

The appellant has only provided a computer generated translation of D3, which is of doubtful quality and can at most be used to assist in understanding the figures. The argument that rollers 4 are separately movable and therefore a few of them may, if necessary, be provided with a clearance, is pure speculation. There is no suggestion in D3 of any sequentially concurrent release of successive pairs of upper and lower rolls, and the appellant has not indicated where one could be found. Thus, D3 also fails at least to disclose feature 1.11.

1.4.3 D5

D5 discloses two distinct installations: a pilot plant (see figure 2) and an industrial prototype (see figure 8). Although D5 suggests an additional pinch roll is necessary at the immediate exit of the cooling equipment to reduce yield losses in any industrial application (see page 12, "Conclusions", final

sentence), there is no disclosure or suggestion of feature 1.11 for either embodiment.

1.4.4 D8

D8 is a further development of the industrial prototype disclosed in D5. The implementation of an additional pinch roll at the immediate exit of the cooling is explicitly shown. However, D8 also does not disclose feature 1.11.

1.4.5 In conclusion, none of the documents alleged by the appellant to take away the novelty of claim 1 discloses feature 1.11. Although this is a functional feature which was originally specified as a method step in claim 29 as filed, it imposes clear constructional characteristics on the claimed apparatus since there must be some kind of specific mechanism providing feedback from the tension giving means to the upstream pinch rolls in order for it to be implemented.

Thus, the subject-matter of claim 1 meets the requirements of Article 54 EPC.

1.5 Inventive step, Art. 56 EPC

1.5.1 Assessment of most promising starting point.

As reasoned above, D1 does not disclose features 1.9 and 1.11 of claim 1, and there is no water breaking means, as the top rolls 24 are always in contact with the top of the strip when the cooling apparatus is functioning. As regards D3, the board would comment that it is difficult to discern any feature directly and unambiguously from the computer generated translation provided by the appellant which can at most

only be used to aid in interpreting the figures; consequently, the relevance of this document is limited.

D6 is not relevant, since it describes technology relating to the cooling of rolled bars upstream of a finishing mill or stand, as opposed to "behind a final finishing mill" as is defined in the claim. Therefore, the board agrees with the respondent that this would be an unrealistic starting point for determining inventive step, since the subject-matter of claim 1 relates to the cooling of steel strip downstream of a finishing mill.

In view of the above assessment, the board considers D8 to be the most promising starting point, since it represents a further development of the industrial prototype disclosed in D5, and clearly discloses sets of pinch rolls located just after the outlet side of the cooling apparatus and at the half way point of the cooling apparatus. Further, it aims to solve the problem of reduced yield caused by the loss of the leading part of the strip not being correctly cooled when it enters the coiler (see D8, page 2, lines 11 to 16). This problem arises in conventional rolling mills producing thin strips, since the cooling apparatus can only be turned on once the strip has engaged the coil. Only then is it possible to provide the necessary tension to pull the strip through the cooling apparatus without distortion against the forces produced by the large amounts of water impinging on the strip, which are needed to produce the desired rapid cooling (see D8, page 2, lines 5 to 10). During the oral proceedings the respondent identified this as being the problem underlying the contested patent, in addition to stabilising the strip exiting the finishing mill and

ensuring that the top end of the steel strip moves smoothly to the coil.

1.5.2 Interpretation of features 1.8 and 1.9

The parties disagree about the meaning of features 1.8 and 1.9, which define that the upper surface cooling means has a water breaking means at least at an inlet side or an outlet side of the cooling apparatus, and which is at a position just above the transfer roll in parallel with the transfer roll and with a clearance to the steel strip.

Contrary to the opinion of the respondent, the board considers that these features are not limited to a water breaking roll (which is only defined in dependent claim 2 as granted). The water spray nozzles of D8 constitute water breaking means in accordance with the claimed feature, since nozzles 7, 8 produce water spray jets which have the effect of a water breaking means (see page 4, lines 16 to 18). There does not appear to be any clear distinction between water breaking means and water "stopping" means as the respondent suggests. When discussing the prior art at paragraph [0011], the patent itself refers to a water breaking method using fluid ejected in a slant direction across the strip. Further, at paragraph [0140] and [0146] of the patent there are references to "water breaking spray nozzles". In particular, paragraph [0146] states that "Another water breaking nozzle with different structures is also acceptable".

1.5.3 Accordingly, the board considers D8 to describe:

an apparatus for cooling a hot rolled steel strip (2), the apparatus comprising:

a transfer means arranged at a run-out table located behind a final finishing mill at a manufacturing equipment for a hot rolled strip (2), said transfer means comprising a plurality of transfer rolls (1) located at the specified interval for transferring the hot rolled strip (2);
at least one upper surface cooling means (4), arranged at an upper surface side of the transfer means, for cooling the hot rolled steel strip (2) by ejecting cooling water to an upper surface of the hot rolled steel strip (2);
at least one lower surface cooling means (not referenced but present in both figures 1 and 2), arranged at an lower surface side of the transfer means relative to the upper cooling means (4) and the hot rolled steel strip (2) to be transferred, for cooling the hot rolled steel strip (2) by ejecting cooling water to the lower surface of the hot rolled steel strip (2);
said upper surface cooling means has a water breaking means (7,8, in combination with 11,11' and 12 see page 3, lines 10 to 11) at an inlet side or an outlet side of the cooling apparatus and at a position just above the transfer roll (1) in parallel with the transfer roll (1) and with a clearance to the steel strip (2);
said apparatus also comprising
a pair of pinched rolls (11,11') just after the outlet side of the cooling apparatus and at the half way of cooling.

The subject-matter of claim 1 differs from the disclosure of D8 by features:

1.7 - said upper surface cooling means moves freely up and down.

1.11 - the steel strip top is then released from a pair of the pinch rolls at the upstream side sequentially concurrently with reaching a tension giving means, such as a pair of pinch rolls at the downstream side or the coiler;

1.5.4 Feature 1.7 is a conventional characteristic of strip mill cooling systems required for accommodating different strip thicknesses, and is explicitly disclosed for example in D1 (see col. 5, line 67 to col. 6, line 6, figure 2) and D3 (see paragraph [0009] in conjunction with figures 1 and 2).

1.5.5 According to feature 1.11 the tension giving means may either be a further pair of pinch rolls at the downstream side or the coiler.

For the case where the tension giving means is a further pair of pinch rolls at the downstream side, the board sees the objective technical problem as one of ensuring that the top end of the steel strip is stabilised and is moved smoothly through the cooling equipment of final finishing mill.

1.5.6 The skilled person is well aware, by simply considering basic mechanical principles, that in order to prevent buckling and jumping of the strip, it must be kept under tension, and that this tension is only ensured when the strip is pulled rather than pushed. Hence, once the strip is engaged in the furthest downstream set of pinch-rolls, the previous set of pinch rolls has essentially done its job. The skilled person is then faced with the choice of either leaving the upstream pinch-rolls in contact with the strip, in which case their speed would need to be exactly synchronised with the downstream pinch-rolls to avoid dragging or the

strip becoming compressed, or simply releasing them, since the strip tensioned by the downstream pinch-rolls. Clearly the second option is the easiest and least onerous to implement.

The release of the strip from the pinch rolls at the upstream side sequentially concurrently with reaching a pair of pinch rolls at the downstream side is therefore an obvious step.

Thus, the subject-matter of claim 1 according to the main request does not involve an inventive step.

2. Auxiliary request.

2.1 Admissibility

This request was filed during the oral proceedings. However, despite its extremely late filing, the board considers that it can be admitted into the proceedings, since it only consists of the deletion of one of the alternatives presented in feature 1.11, and is a direct response to the discussions which took place during the oral proceedings. The board is of the view that the appellant was not presented with any undue difficulty in handling this request, and had indeed already presented arguments and documents relevant to this aspect of claim 1 during the written proceedings.

2.2 Inventive step

2.2.1 D8 is again considered to be the most promising starting point, and the feature analysis given in relation to the main request applies.

The only remaining issue to be addressed therefore is whether feature 1.11, when limited to the steel strip being released from a pair of the pinch rolls at the upstream side sequentially concurrently with reaching a tension giving means in the form of a coiler, involves an inventive step.

2.2.2 During the oral proceedings the respondent identified the problem of reduced yield caused by the loss of the first part of the strip not being correctly cooled and/or tensioned as being the problem underlying the contested patent. This is in addition to the problem of ensuring that the leading end of the steel strip moves smoothly and in a stable manner from the final finishing mill to the coiler.

2.2.3 The board agrees with the appellant that the skilled person faced with this problem would consult D9, since it deals with strip stabilisation and the control of strip tension (see col. 1, lines 9 to 11).

In the apparatus of D9 the top pinch roll 26 is lifted vertically out from engagement with the upper surface of the strip when sufficient convulsions of strip are formed on the coiler mandrel to establish a driving relationship, whereupon tension in the strip between the last finishing stand 16 and the coiler mandrel is controlled by the drive motor for the coiler (see col. 4, lines 43 to 49). However, according to feature 1.11 the pinch roll is released from the pinch rolls at the upstream side sequentially concurrently with *reaching* the coiler. In other words, and the respondent laid great emphasis on this point, the pinch roll is released *before* any of the strip has actually been coiled on the mandrel.

2.2.4 The respondent argued that by so releasing the pinch-roll, the metallurgical properties of the leading end of the strip are maintained, thereby eliminating or significantly reducing yield losses.

It is plausible that, as the respondent suggests, the earlier release of the pinch rolls causes different stresses at the front end of the strip compared with those that occur in the arrangement of D9 where the pinch rolls force the strip around the mandrel before the coiler motor takes up the tension.

Such an arrangement for the coiler is also not obvious since the skilled person would normally wish to maintain the strip under tension and therefore would adopt an arrangement as disclosed in D9.

In the installation according to D8, although it is not disclosed exactly how the coiling is achieved, it is stated that at least the first 20m of the strip need to be removed and are lost.

Therefore a combination of D8 and D9 does not lead to the subject-matter of claim 1 according to the auxiliary request, which therefore involves an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent as amended in the following version:

- description: pages 2 to 18 of the amended patent specification filed in the oral proceedings as part of the auxiliary request;

- claim 1 to 20 of the auxiliary request filed in the oral proceedings;

- figures 1 to 12B of the published patent specification.

The Registrar: The Chairman:

G. Rauh G. Ashley

Decision electronically authenticated