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**Datasheet for the decision
of 20 January 2022**

Case Number: T 0255/19 - 3.2.03

Application Number: 11715750.3

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Language of the proceedings: EN

Title of invention:
ROLLING MILL FOR LONG ARTICLES

Patent Proprietor:
SMS Innse S.p.A.

Opponent:
DANIELI & C.
OFFICINE MECCANICHE SpA

Headword:

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

Keyword:

Novelty - prior disclosure - implicit features (no) - implicit disclosure (no) - main request (yes)

Inventive step - ex post facto analysis - main request (yes)

Decisions cited:

Catchword:



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Case Number: T 0255/19 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 20 January 2022

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
19 November 2018 concerning maintenance of the
European Patent No. 2560771 in amended form.**

Composition of the Board:

Chairman G. Patton
Members: R. Baltanás y Jorge
N. Obrovski

Summary of Facts and Submissions

- I. European patent No. 2 560 771 B1 ("the patent") relates to a rolling mill for long articles.
- II. An opposition was filed against the patent based on Article 100(a) EPC together with Articles 54 and 56 EPC.
- III. This appeal lies from the interlocutory decision of the opposition division to maintain the patent in amended form according to the auxiliary request 1 filed during the oral proceedings. The opposition division also found that the subject-matter of granted claim 1 did not involve an inventive step with regard to the combination of D1 and the common general knowledge.
- IV. This decision was appealed by the opponent and the patent proprietor. For the sake of simplicity, the parties, both appellants and respondents, are referred to in the following as the opponent and the patent proprietor.
- V. In a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA) annexed to the summons, the Board indicated its preliminary opinion of the case.

Oral proceedings were held on 20 January 2022.

VI. Requests

The patent proprietor requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or, alternatively, in amended

form on the basis of auxiliary requests I to IX filed with its reply to the statement of grounds of appeal dated 8 August 2019. It further requested that the opponent's appeal be dismissed.

The opponent requested that the decision under appeal be set aside and that the patent be revoked. It further requested that the patent proprietor's appeal be dismissed.

VII. Claim 1 as granted (main request), including the feature numbering adopted by the Board, reads as follows:

- M1** *A continuous rolling mill (20) for rolling an article (44) defining a rolling axis X,*
- M2** *comprising at least two rolling stations (22) arranged in series along the rolling axis X,*
- M3** *wherein at least one rolling station (22) comprises:*
 - M3a** *- a fixed structure (40);*
 - M3b** *- a roll-holder cartridge (24) connected removably to the fixed structure (40) and comprising three rolling rolls (26.a, 26.b, 26.c) mounted on the roll-holder cartridge (24) so as to be movable radially with respect to the rolling axis X, the three rolls being rotatable about three respective axes (r.a, r.b, r.c) arranged at 120° from each other;*
 - M3c** *- three actuators (32.a, 32.b, 32.c) mounted on the fixed structure (40) and comprising pistons (50.a, 50.b, 50.c) movable along three respective radial axes (t.a, t.b, t.c) arranged at 120° from each other, each of said actuators (32.a, 32.b, 32.c) being able, during use, to act on one of said rolls (26.a, 26.b, 26.c) so*

as to impart a radial force suitable for the rolling of the article (44);

M3d *characterized in that the three actuators (32.a, 32.b, 32.c) are of the single-stroke type*

M3e *and are arranged so that, when the pistons (50.a, 50.b) of two actuators (32.a, 32.b) are completely retracted to the end-of-travel stop of the working stroke, a path P is created free from obstacles and parallel to the axis (t.c) of the third actuator (32.c), said path P allowing the roll-holder cartridge (24) to pass out laterally on the opposite side to that where the third actuator (32.c) is situated.*

Independent claim 2 as granted (main request), including the feature numbering adopted by the Board, reads as follows:

M1 *A continuous rolling mill (20) for rolling an article (44) defining a rolling axis X,*

M2 *comprising at least two rolling stations (22) arranged in series along the rolling axis X,*

M3 *wherein at least one rolling station (22) comprises:*

M3a *- a fixed structure (40);*

M3b *- a roll-holder cartridge (24) connected removably to the fixed structure (40) and comprising three rolling rolls (26.a, 26.b, 26.c) mounted on the roll-holder cartridge (24) so as to be movable radially with respect to the rolling axis X, the three rolls being rotatable about three respective axes (r.a, r.b, r.c) arranged at 120° from each other;*

- M3f** - three gearmotors (36.a, 36.b, 36.c) connected to the rolls (26.a, 26.b, 26.c) by means of spindles (34.a, 34.b, 34.c) so as to provide the rolls (26.a, 26.b, 26.c) with the torque necessary for causing feeding of the article (44) along the rolling axis X;
- M3g** characterized in that at least one spindle (34.a) may be subject to a rotation-translation movement
- M3h** so as to be removed from a path P which allows the roll-holder cartridge (24) to pass out laterally, the respective gearmotor (36.a) being mounted in a fixed manner on its base.

Dependent claims 3 to 16 concern preferred embodiments of the rolling mill of claim 1 and/or 2.

VIII. Since auxiliary requests I to IX are not dealt with in this decision, no reference to their content is necessary.

IX. State of the art

The following documents are relevant for this decision:

- OD3: Print out of the PowerPoint presentation "Innovation in Seamless Pipe Production", dated 2 November 2009
- OD4: Sworn written statement of Mr Simone Bettinelli
- D1: WO 2009/141414 A1
- D2: IT MI93 A/00704
- D2': English translation of D2
- D3: DE 901 526 C
- I1: https://youtu.be/LyG-dYE_ZS8
- I2: <https://youtu.be/1cCBpLAKjNI>

X. The opponent's arguments can be summarised as follows.

(a) Main request, claim 1 - Novelty

The opponent argued that the subject-matter of claim 1 lacked novelty over OD3 alone or in combination with the alleged oral disclosure according to OD4. According to the opponent, the figure on the left of page 12 of OD3 disclosed the use of single-stroke actuators and supported the content of the sworn statement by Mr Bettinelli (OD4). The use of the same graphical representation in Figures 13 to 18 of the contested patent proved that this was a generally recognised standard for the skilled person.

(b) Main request, claim 2 - Novelty

D2 disclosed feature M3g (at least one spindle may be subject to a rotation-translation movement) since the skilled person understood from this document that a retraction of the spindle for the disengagement from the roll was possible and a rotation of the same spindle was allowed by the disclosed Cardan joint. The opponent stated that this type of connection was widely known, referring to I1 and I2 as evidence of this common general knowledge. Additionally, Figure 1 of D2 disclosed that spindles 56, 57 and 58 were made of two telescopically interconnected parts.

(c) Main request, claim 1 - Inventive step

Granted claim 1 did not involve an inventive step with regard to the combination of D1 with the common general knowledge of the skilled person.

The closest prior art was the embodiment of D1 in which three double-stroke actuators were used.

Feature M3e (complete retraction of two actuators creating a path allowing the roll-holder cartridge to pass out laterally) was disclosed in D1 since when two actuators were retracted to some extent, the roll-holder cartridge could have been exchanged according to this document. It necessarily followed that the complete retraction of the same two actuators could only result in the same effect.

Document D1 was discussed in the contested patent (paragraph [0020]), and the main drawback of the solution disclosed was identified as "*the asymmetry of the system of stiffnesses*" (paragraph [0021]). The same passage of the patent mentioned the fact that double-stroke actuators were more costly and complex than ordinary single-stroke actuators. The embodiment of the closest prior art was symmetric. Thus, the drawback related to asymmetry was overcome by a solution based on actuators fixed to the external structure of the rolling mill stands (see D1, page 2, lines 17 to 21). Consequently, the only remaining drawback in the closest prior art was the provision of simplified actuators which allowed the lateral extraction of the roll-holder cartridge, and this was the objective technical problem to be considered.

The skilled person, being aware of the existence of single-stroke actuators and their characteristics, would have selected these to address the objective technical problem.

The skilled person would have found no impediment for doing so in D1 as the provision of at least one double-

stroke actuator was not disclosed as essential. The problem of lack of uniform stiffness was addressed by other means - i.e. direct fixation of the actuators to the external structure and symmetry of the actuators - and the double-stroke actuators were only disclosed as necessary when objects ranging between 8 and 35 metres long were rolled (page 6, line 31 to page 7, line 10). According to the opponent, at the time of drafting D1 - for which the opponent was the applicant - the inventor wanted to compensate for the impact of the head of the tube to be rolled for larger tube diameters, a situation for which larger structures in the rolling mill are needed. As the actuators were fixed to these larger structures, they needed to be longer, thus resulting in a need for double-stroke actuators to avoid problems related to the elasticity of the actuators when compensating for the impacts. Thus, the skilled person reading D1 understood that, when other objects not falling within that size range were to be rolled, the necessary total stroke of the actuator was shorter than in this particular case. Meaning that it was possible to use single-stroke actuators to reduce complexity and costs as discussed in paragraph [0021] of the contested patent.

The replacement of double-stroke actuators with single-stroke actuators would not have hindered the creation of a lateral path for extraction of the roll-holder cartridge. This was confirmed by the contested patent, which disclosed working strokes of the single-stroke actuators shorter than 300 mm (see paragraph [0046]) and within the usual ranges of the prior art (see paragraph [0047]). Furthermore, granted claim 1 did not define any working stroke value for the invention. The replacement of the roll-holder cartridge would thus

have remained possible after replacement of the actuators in D1.

(d) Main request, claim 2 - Inventive step

The closest prior art was the embodiment of D1 disclosed in Figure 3. Claim 2 differed from this embodiment in features M3g (rotation-translation movement of a spindle) and M3h (rotated-translated spindle removed from a path of the roll-holder cartridge, the respective gearmotor being mounted in a fixed manner on its base).

The technical effect of the differentiating features was that the compactness in the transverse direction of the rolling mill was increased. The objective technical problem was thus to make the rolling mill more compact along its transverse direction.

The skilled person would have consulted D3 since it also concerned a rolling mill with lateral extraction of the roll-holder cartridge. This document disclosed a solution for the objective technical problem in the form of a fixed motor and rotating-translating spindles (Figure 3). The skilled person would have derived the advantages of this solution from Figure 3 alone and ignored the absence of actuators in D3 since this feature was not related to the objective technical problem.

Alternatively, the choice of spindles that can be elongated or shortened axially would have been adopted by the skilled person when starting from D2 as the closest prior art, since such solution was the simplest to be adapted to the disclosure of the roll stand of D2 in order to remove the spindle from being an obstacle

for the roll-holder cartridge when removing it laterally. The solution was even hinted at by Figures 1 and 3 of D2.

XI. The patent proprietor's arguments can be summarised as follows.

(a) Main request, claim 1 - Novelty

The public availability of OD3 or the alleged oral disclosure was not proven up to the necessary standard of proof. In any case, no disclosure of features M3d (three single-stroke actuators) and M3e (complete retraction of two actuators creating a path allowing the roll-holder cartridge to pass out laterally) was identifiable in the alleged prior art.

(b) Main request, claim 2 - Novelty

Documents I1 and I2 should not be considered for being late-filed and not substantiated in the statement setting out the grounds of appeal.

D2 did not disclose feature M3g (at least one spindle may be subject to a rotation-translation movement). No prompt in this direction could have been found in the figures or the description of the document.

(c) Main request, claim 1 - Inventive step

Claim 1 differed from the closest prior art D1 in features M3d and M3e. Concerning this last feature, D1 did not disclose the end of stroke of the actuators' pistons and its effect.

The replacement of the double-stroke actuators with single-stroke actuators in D1 would have run against the teaching of this document, which solved the technical problem of extracting the roll-holder cartridge by providing at least one double-stroke actuator. This was the case for all embodiments, including the one taken as the closest prior art.

(d) Main request, claim 2 - Inventive step

The objective technical problem addressed by the invention was to reduce the complexity of construction for replacing the roll-holder cartridge.

The combination of D1 with D3 was not possible in an obvious manner since it would have been necessary to add or delete several features in an inventive manner.

Reasons for the Decision

1. Main request - Novelty (Article 54(2) EPC)

1.1 Claim 1

1.1.1 Content of OD3

The graphical representation used in Figures 13 to 18 of the contested patent is not identical to the one shown in the left figure of page 12 of OD3. Consequently, the conclusion that the actuators of OD3 must be single-stroke actuators as in the patent cannot be accepted.

Even if the actuators in the patent and OD3 had actually been drawn in the same way, a graphical representation in a **patent** does not prove that this was a generally recognised standard for the skilled person **before** the priority date of the **same patent** concerning an aspect which cannot be directly derived from the representation - i.e. the internal construction of the actuator and its operation.

Moreover, the content of the left figure on page 12 of OD3 does not allow drawing any conclusions about how the roll-holder cartridge is extracted laterally, i.e. which steps have to be carried out to do so. Furthermore, the patent proprietor is right that the actuators disclosed in the figure are an obstacle for the lateral extraction taking into account the dimensions of the roll-holder cartridge and the position of the actuators on the left side.

Therefore, no clear and unambiguous disclosure of features M3d (three single-stroke actuators) and M3e (creation of a free path by the retraction of the pistons of two actuators) is provided in OD3.

1.1.2 Oral disclosure according to OD4

The combination of the content of OD3 with the oral disclosure according to OD4 does not lead to a different conclusion.

The sworn statement by Mr Bettinelli (OD4) merely states that he explained "*to the attendees in which manner the roll cartridges were extracted laterally*". This does not specify **which extraction methodology and steps** were disclosed to the attendees, i.e. **how the**

actuators were to be manipulated to create a free path for the roll-holder cartridge.

Moreover, Mr Bettinelli acknowledges that he *"mentioned that the three actuators (hydraulic capsules) were all the same type without specifying the type, design and features, that means **without specifying if they were single or double stroke type**"* (emphasis added).

Thus, the alleged oral disclosure does not disclose at least features M3d and M3e and cannot contribute to fill this gap in the content of OD3.

1.1.3 The subject-matter of claim 1 is thus novel over OD3 alone or in combination with the invoked oral disclosure.

1.1.4 In view of the above conclusion, the question about whether the oral disclosure invoked by the opponent and the related document OD3 were publicly available before the priority date of the contested patent can be left open.

1.2 Claim 2

1.2.1 Relevance of I1 and I2

I1 and I2 concern typical Cardan joint transmissions used in agriculture.

A drive based on a spline connection and a Cardan joint has long formed part of the common general knowledge of the skilled person in mechanics before the priority date of the patent. This was explained in the

preliminary opinion issued by the Board and was not contested by the patent proprietor.

Therefore, documents I1 and I2 do not contribute anything to the discussion, and there is no need to discuss them further.

1.2.2 D2

The Board is not persuaded by the arguments of the opponent on the implicit disclosure of feature M3g (at least one spindle may be subject to a rotation-translation movement) in D2.

Document D2 (i.e. based on its translation D2') discloses Cardan joints (60, 61, 62) at the respective ends of the spindles ("extensions" 56, 57, 58) connected to the motor means (55). D2 discloses also "*conventional connecting means 65*" at the other end of each spindle (56, 57, 58) "*for the removable connection between each roll 27, 28 and 29 and the corresponding extension*" (see page 13 of D2', second paragraph). D2 is silent about the nature of this "conventional connecting means", and the graphical representation is of some kind of conventional clutch or connecting flange. This is consistent with the disclosed function of the conventional connecting means (65) since these elements enable a disconnection of two rotating shafts like the ones represented in Figure 3. However, no telescopic construction of the spindles (56, 57, 58) can be deduced from the disclosure of the conventional connecting means (65) and its related function since the spindles could be taken out of the extraction path of the roll-holder cartridge in several ways if the connecting means are physically disconnected from the rolls.

The argument of the opponent about the disclosure of two telescopically interconnected parts in the spindles (56, 57, 58) of Figure 1 is not persuasive since Figure 1 is merely schematic and does not allow drawing such a conclusion. The reduced section of the end portions of the spindles may well represent a non-telescopic part or a graphical representation of the portions of the spindle hidden by other parts of the device. No unambiguous and direct disclosure of feature M3g can thus be derived from Figure 1.

1.2.3 Consequently, the subject-matter of claim 2 is novel over D2.

2. Main request - Inventive step (Article 56 EPC)

2.1 Claim 1

2.1.1 Closest prior art

It is undisputed that the embodiment of D1 comprising three double-stroke actuators (see page 6, lines 9 to 17, in particular the last three lines) is an appropriate starting point for assessing the inventive step of the invention claimed in claim 1.

D1 discloses a continuous rolling mill (1') for rolling an article defining a rolling axis, comprising at least two rolling stations (1) arranged in series along the rolling axis (see Figure 1), wherein at least one rolling station comprises:

- a fixed structure (13);

- a roll-holder cartridge (3) connected removably to the fixed structure (13) and comprising three rolling rolls (2) mounted on the roll-holder cartridge (3) so as to be movable radially with respect to the rolling axis, the three rolls being rotatable about three respective axes arranged at 120° from each other (see Figure 3);

- three actuators ("capsules" 4', 4") mounted on the fixed structure (13) and comprising pistons (19, 20) movable along three respective radial axes arranged at 120° from each other (see Figure 3), each of said actuators (4', 4") being able, during use, to act on one of said rolls (2) so as to impart a radial force suitable for the rolling of the article;

- the three actuators (4', 4") being of the double-stroke type (see page 6, lines 9 to 17, in particular the last three lines) and being arranged so that, when the pistons of two actuators (4") are retracted (see page 6, lines 18 to 22), a path is created free from obstacles and parallel to the axis of the third actuator (4'), said path allowing the roll-holder cartridge (3) to pass out laterally on the opposite side to that where the third actuator (4') is situated (see Figure 3, extraction position 3').

D1 therefore discloses features M1, M2, M3, M3a, M3b and M3c. This has not been contested.

- 2.1.2 Feature M3e (complete retraction of two actuators creating a path allowing the roll-holder cartridge to pass out laterally)

Lines 18 to 22 of page 6 disclose that the pistons of the actuators ("*hydraulic capsules*" 4") can be retracted ("*include an opening of the piston*"; see also page 3, lines 2 and 3 or Figure 5 in combination with page 7, lines 16 to 21) to create a path for the roll-holder cartridge (3) to be extracted. Thus, if the cartridge (3) can be extracted when the pistons of the actuators (4") are retracted to some extent, this must also be the case when the pistons are completely retracted.

The patent proprietor has not explained how the path for the extraction of the roll-holder cartridge could only be created following a partial retraction of the pistons of the actuators of D1 but not when the pistons are completely retracted. The Board cannot imagine any embodiment where this would be technically feasible.

Feature M3e is thus disclosed by D1.

- 2.1.3 Differentiating features

In view of the above, claim 1 only differs from D1 in feature M3d (the three actuators are of the single-stroke type).

The technical effect of the differentiating feature M3d is that a simpler actuator is used. The related objective technical problem proposed by the opponent (simplifying actuators which allow the lateral extraction of the roll-holder cartridge) is thus

appropriate and will be taken into account for the assessment of inventive step.

2.1.4 Obviousness of the modification

D1 concerns the side extraction of the roll-holder cartridge in a rolling mill such as the one of the invention (see page 2, lines 17 to 21). It takes, as a starting point, prior art comparable to D2, where one of the actuators ("capsules") is mounted on a hinged arm (see D2, Figure 2). D1 identifies a fundamental drawback in the cited prior art devices, namely the lack of stiffness uniformity due to the actuator being mounted on a hinged arm (see D1, page 2, lines 3 to 8). The aim of the invention of D1 is to address this drawback and provide stiffness uniformity by means of firmly fixed capsules (see page 2, lines 14 to 21). The general description of the invention in D1 defines the necessary features for achieving this aim (see page 2, line 27 to page 3, line 6).

The provision of **at least one** first hydraulic capsule of the **double-stroke type** plays a prominent role among these essential features since it renders possible a **"second clearance stroke"** to facilitate the side extraction of the roll-holder cartridge in addition to the "first working stroke" necessary to adjust the radial position of the respective working roll to perform the rolling process. This is stated in the "Summary of the invention" section (see page 3, lines 1 to 3), and the corresponding feature is included in claim 1 of the patent application.

In view of the formulation of the invention in its broadest terms in the "Summary of the invention" and claim 1, the skilled person reading D1 can only

understand that the provision of at least one first hydraulic capsule of the double-stroke type is essential to the invention. This is so irrespective of any possible true intention of the patent applicant at the time of filing D1 since the skilled person can only assess the document according to its content and ignores any other undisclosed information which might have been available to the applicant.

The description of the embodiment of D1 on pages 6 and 7 merely confirms what is explained in the general part of the document. The embodiment of D1 discloses that to laterally extract the roll-holder cartridge (3), the pistons of the double-stroke actuators (4") must be retracted (see page 6, lines 11 to 14 and 18 to 22). The embodiment also discloses that the **working stroke** of the actuators (4") must be limited to about 150 mm, whereas the **minimum stroke** for ensuring the clearance role of the actuators (4") during the extraction process is about 400 mm, which is not compatible with the functionality of the system (see page 6, lines 23 to 33). As a solution for this dilemma, the embodiment discloses, **in line with the general disclosure** of the invention, that double-stroke actuators must be used (see page 7, lines 9 and 10; the word "advantageously" merely meaning that this solution entails an advantage). D1 does not disclose any other way of solving the contradictory requirements of the actuators (4"), let alone using a single-stroke actuator for this purpose.

The argument of the opponent on the fact that the paragraph bridging pages 6 and 7 must relate to an embodiment intended for pieces to be rolled of a specific length is not persuasive.

Firstly, the paragraph starts with the unambiguous wording "*The geometry of the system **according to the invention** requires a minimum stroke for the capsules 4" of about 400 mm, a value which is **not compatible with the dynamic functionality** of the system itself*" (emphasis added). This indicates that the problem is common to all embodiments of the invention. As mentioned above, the solution to this problem is disclosed immediately afterwards in the form of a double-stroke actuator (see page 7, lines 9 and 10), in line with the "Summary of the invention" and claim 1.

Secondly, the fact that lines 6 to 8 of page 7 disclose that "*In a rolling mill used for rolling single pieces of moderate length, e.g. 8-35 meters, it is important to overcome this type of problem in order to ensure the thickness tolerances of the tube head*" does not imply that the problem of **compatibility with the dynamic functionality** mentioned a few lines before in the same paragraph does not arise when pieces to be rolled of a different length are rolled. The sentence merely says that in a rolling mill able to roll pieces of the indicated length, this problem entails a particular negative effect; it does not state that the same problem is without consequences when pieces of other lengths are rolled.

Consequently, the skilled person understands from the content of D1 as a whole that at least one double-stroke actuator is **essential for the lateral extraction** of the roll-holder cartridge without negative consequences. The skilled person would thus not think of replacing the essential (at least one) double-stroke actuator of D1 with a single-stroke actuator without hindsight since this goes directly against the aim of the invention of D1.

Moreover, such a replacement would entail that the roll-holder cartridge of D1 cannot be laterally extracted any more due to the absence of a **clearance stroke**, or that a solution as discussed in the prior art considered by D1 should be implemented, which would incur a lack of uniformity of stiffness (see page 2, lines 3 to 8).

The opponent argued that the replacement of double-stroke actuators with single-stroke actuators would not have hindered the creation of a lateral path for extraction of the roll-holder cartridge since the contested patent disclosed working strokes of the single-stroke actuators shorter than 300 mm (see paragraph [0046]) and within the usual ranges of the prior art (see paragraph [0047]). This argument cannot be accepted since the skilled person did not have access to the contested patent when assessing the teaching of D1. Similarly, the fact that claim 1 does not define any working stroke value for the invention is irrelevant in this context since what matters is whether the skilled person, with the information at their disposal in D1, would have arrived at a solution where single-stroke actuators with relatively short working strokes could have provided a path for the extraction of the roll-holder cartridge.

Finally, the hypothetical provision of undisclosed single-stroke actuators with longer working strokes would cause (at least) the substantial problems indicated in page 6, line 31 to page 7, line 6 of D1 and would thus be discarded by the skilled person.

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

2.2 Claim 2

2.2.1 D1 in combination with D3

The consideration of the embodiment of D1 disclosed in Figure 3 as a suitable starting point for the assessment of inventive step is undisputed.

D1 discloses features M1, M2, M3, M3a and M3b, as explained in point 2.1.1 above. Furthermore D1 discloses three gearmotors ("motor" 6) connected to the rolls (2) by means of spindles ("control extension" 5, 5', 5") to provide the rolls (2) with the torque necessary to feed the article along the rolling axis (see Figure 3). Thus, feature M3f is also disclosed by D1. This is not contested by the patent proprietor.

Differentiating features

It is undisputed that the subject-matter of claim 2 differs from D1 in features M3g (at least one spindle may be subject to a rotation-translation movement) and M3h (rotated-translated spindle removed from a path of the roll-holder cartridge, the respective gearmotor being mounted in a fixed manner on its base).

The technical effect of the differentiating features is that the spindle can be moved out of the path without displacing the motor.

Both the objective technical problem proposed by the opponent (increasing compactness of the rolling mill in the transverse direction) and the one proposed by the patent proprietor (reducing complexity of construction) are plausible in view of the technical effect.

Combination with D3

D3 discloses a rolling mill comprising three motors (7; see Figure 2) fixed in position and spindles (5, 5') that can be rotated around their basis and translated along their longitudinal axis to be removed from a path which allows the roll-holder cartridge to pass out laterally (see Figures 1 and 3).

The only technical problems addressed in D3 are to (i) stop residues originating from the rolled tube falling onto the transmission, (ii) easily replace the roll-holder cartridge and (iii) allow good observation of the rolling process (see page 1, lines 7 to 15). No discussion about compactness or complexity of construction can be found in the description of D3.

The skilled person, looking merely at the figures of D3, could also not infer any advantage concerning increased compactness of the rolling mill in the transverse direction since the rolling mill in these figures is not more compact than the rolling mill of Figure 3 of D1. To the contrary, the presence of the angled transmission 7 ("*reducer*") in D1 results in a shorter spindle with regard to D3, thus providing a rolling mill which is not less compact in the transverse direction, even when the motor (6) moves back along the slide (8; compare Figure 3 of D1 with Figures 1 and 3 of D3). The skilled person would thus not consider D3 when looking for a solution for the objective technical problem proposed by the opponent.

The objective technical problem proposed by the patent proprietor (reducing complexity of construction) does not lead to a different conclusion. The description of

D3 does not discuss any advantage in this respect. The figures of D3 disclose a large transversal gearbox between the motors (7) located at an axial end of the rolling mill and the spindles (5, 5'; see Figure 2). The rolling mill of D1 does not require such a large gearbox, and the motors (6) do not protrude from the rolling mill in an axial direction (see Figure 3). The skilled person would thus not necessarily consider the arrangement of D3 to be less complex than the one of D1, and would therefore not take D3 into consideration when looking for a way to reduce the complexity of construction of the rolling mill of D1.

Finally, as pointed out by the opposition division, the construction of D3 is so different from D1 that the skilled person would not know how to combine their teachings. D3 discloses a rolling mill without actuators. This renders possible rotating the spindles (5, 5') on the right side when creating a path to exchange the roll-holder cartridge (1) since the spindles (5, 5') find no obstacle in their folding path (see Figures 1 and 3). However, the rolling mill of D1 comprises an actuator (4") in the equivalent position towards which the spindles should be folded when following the teaching of D3 (see D1, Figure 3, actuator 4" at the bottom left of the roll-holder cartridge). Consequently, rotating the spindle (5") of D1 as disclosed in D3 would be impossible, and the skilled person would have to carry out a number of adaptations for it to be possible since the direct combination of the features would lead to a rolling mill where the rotation and translation of the spindles would not create a path allowing the roll-holder cartridge to pass out laterally as in feature M3h.

The argument of the opponent concerning the absence of actuators in claim 2 and their irrelevance for the objective technical problem as evidence that the skilled person would disregard the actuators when combining D1 and D3 is not persuasive. When considering whether the skilled person would combine D1 with the teaching of D3, the **incompatibilities** that may arise **due to the particular construction of each device as disclosed** in these documents must be considered. What is not defined in the contested claim is irrelevant for this analysis since the skilled person would only base their actions on the prior art available to them. The same applies to elements present in the proposed prior art but that are irrelevant for the objective technical problem.

2.2.2 D2 in combination with common general knowledge

Since no new argument has been provided during the oral proceedings, the Board remains of the opinion advanced in the annex to the summons.

The opponent argues that the choice of spindles that can be elongated or shortened axially would be adopted by the skilled person when starting from D2 since "*such solution is the simplest to adapt to the disclosure of roll stand of D2 to remove the spindle from being an obstacle for the cartridge when removing it laterally*". According to the opponent, such a solution is hinted at by Figures 1 and 3 of D2.

The Board does not find this reasoning persuasive.

As explained in point 1.2.1 above, splined connections which can be elongated are considered to be common general knowledge for the skilled person.

However, D2 merely discloses spindles 56, 57, 58 which do not hint at a splined connection. The reasoning of the opponent seems to be tainted by an *ex post facto* approach based on a mere and unsubstantiated assertion.

2.2.3 In conclusion, the subject-matter of claim 2 of the main request involves an inventive step.

3. In the absence of further objections, no ground for opposition prejudices the maintenance of the patent as granted (Article 101(2) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is maintained as granted.

The Registrar:

The Chairman:



C. Spira

G. Patton

Decision electronically authenticated