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**D E C I S I O N**  
**of 18 September 2001**

**Case Number:** T 0864/99 - 3.2.1  
**Application Number:** 93300264.4  
**Publication Number:** 0554976  
**IPC:** B21C 47/26, B21C 47/14,  
B21B 41/00

**Language of the proceedings:** EN

**Title of invention:**  
Rod laying head with front and tail end ring control

**Patentee:**  
MORGAN CONSTRUCTION COMPANY

**Opponent:**  
SMS Schloemann-Siemag AG

**Headword:**  
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**Relevant legal provisions:**  
EPC Art. 56, 114(2)

**Keyword:**  
"Belated submissions concerning alleged prior use  
(disregarded)"  
"Inventive step (yes)"

**Decisions cited:**  
T 0129/88, T 0093/89

**Catchword:**  
-



Case Number: T 0864/99 - 3.2.1

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.1**  
**of 18 September 2001**

**Appellant:** SMS Schloemann-Siemag AG  
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**Representative:** Valentin, Ekkehard, Dipl.-Ing.  
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**Respondent:** MORGAN CONSTRUCTION COMPANY  
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**Representative:** Woodcraft, David Charles  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 23 June 1999  
rejecting the opposition filed against European  
patent No. 0 554 976 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** F. Gumbel  
**Members:** S. Crane  
J. Van Moer

## Summary of Facts and Submissions

- I. European patent No. 554 976 was granted on 23 April 1997 on the basis of European patent application No. 93 300 264.4.

Claim 1 of the granted patent reads as follows:

"A laying head (18) for forming an axially moving elongated product into a series of rings (24), said laying head having an elongated tubular support (36), means for rotating said support about its longitudinal axis, a pipe (46) carried by said support for rotation therewith, said pipe having an inlet end (46a) aligned with said axis and arranged to receive said product, with an intermediate portion (46b) defining a curved guide path leading from said inlet end to an outlet end arranged to rotate about said axis and from which said product is discharged in the form of a continuous series of rings and guide means communicating with said outlet end for defining a helical extension of said guide path, characterized by said guide means comprising a radially outwardly facing trough (50) detachably connected to said support (36) for rotation therewith, and a cylindrical shroud (52) surrounding and co-operating with said trough to define a radially and axially confined helical extension of said guide path."

Dependent claims 2 to 12 relate to preferred embodiments of the laying head of claim 1.

- II. The granted patent was opposed by the present appellants on the basis that its subject-matter lacked novelty and/or inventive step (Article 100(a) EPC).

Of the state of the art relied upon in the opposition proceedings only the following pre-published document has played any role on appeal:

(D1) DE-B-1 291 716.

III. With its decision posted on 23 June 1999 the Opposition Division rejected the opposition.

IV. A notice of appeal against this decision was filed on 2 September 1999 and the fee for appeal paid at the same time. The notice of appeal was accompanied by the statement of grounds.

In the statement of grounds the appellants referred to a further prior art document, viz. (D5) DE-C-1 240 025.

A counterstatement was filed by the respondent (proprietors of the patent) on 27 November 1999 and then on 5 July 2000 the appellants submitted extensive evidence concerning the alleged public prior use of a laying head having all the features of granted claim 1.

V. Oral proceedings before the Board were held on 18 September 2001.

The appellants requested that the decision under appeal be set aside and the patent revoked in its entirety (main request) or, in the alternative, that the matter be referred back to the Opposition Division for further examination.

The respondent requested that the appeal be dismissed (main request) or, in the alternative, that the patent be maintained in amended form on the basis of the set

of claims filed on 16 August 2001, of which claim 1 combined the features of granted claims 1 and 2.

IV. The arguments presented by the appellants in the support of their requests were substantially as follows:

The contested decision was based on an incorrect technical appreciation of the teachings of document D1, in particular that the worm extension of this known laying head did not constitute guide means comprising a radially outwardly facing trough. From an inspection of Figures 1 and 2 of the document it could however be clearly seen that the helical guide plate for the rod extended over more than a single turn and thereby formed a trough which limited axial movement of the rod in both directions. The helical form of the trough was also readily visible in Figures 5 to 7 of document D1 and in document D5, on which document D1 was a patent of addition.

As a consequence, the subject-matter of granted claim 1 was only distinguished from the state of the art according to document D1 by virtue of the requirement that the trough be detachably connected to the rotatable support. It had however already been proposed in DD-C-269 329 (D6), which was mentioned in the patent specification and itself referred specifically to document D1, to mount the helical guide plate detachably.

The belated submission of evidence concerning the public prior use of a laying head having all the features of granted claim 1 had been a direct consequence of the incorrect evaluation of the

teachings of document D1 by the Opposition Division. Since the evidence was *prima facie* highly relevant to the fate of the patent the Board should take it into account. If it felt that there were still some questions which needed to be answered with respect to the prior use, then the proper course would be to remit the case to the Opposition Division for further examination. This would properly balance the interests of the parties and the public.

VI. In reply the respondents argued essentially as follows:

The important difference between the helical trough required by granted claim 1 and the worm-like guide plate taught by document D1 lay in the fact that it was possible to choose the pitch of the trough independently of its width. Thus the trough could be made to define an extension of the guide path for the rod which matched this guide path both in width and pitch. It was this arrangement which solved the problem of tail end kinking which the invention was specifically concerned with and with respect to which D1 was wholly silent.

The appellants had no proper excuse for the very belated filing of their submissions with respect to the alleged public prior use. In any case, it was still unclear as to what exactly had been prior used and the extent to which any such use had been public. The Board should therefore make use of its discretion to disregard these submissions.

## **Reasons for the Decision**

1. The appeal complies with the formal requirements of Article 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.
  
2. The contested patent is concerned with a laying head used to form the rod exiting from a rod rolling mill into helical formations or "rings". The basic configuration of such a laying head is well known. It comprises a rotatable tubular support which carries a laying pipe having an inlet end for the rod aligned with the axis of rotation of the tubular support, a three dimensionally curved intermediate portion and an outlet end radially spaced from said axis and from which the rod is discharged at a small pitch angle to form a series of rings. In operation these are collected onto a conveyor where they are subjected to various heat treatments.

At high rolling mill speeds there arises the problem that the tail end of the rod is not laid in an orderly fashion as it is no longer restrained by the upstream pinch roll unit. The buckling and/or increase in diameter of the last ring can interfere with the operation of the conveyor and/or subsequent processing equipment, so that it is necessary to remove the last ring manually, which involves significant labour costs.

It is the solution of this technical problem to which the claimed invention is addressed. To this end guide means for the rod are arranged at the forward end of tubular support, the guide means comprising a radially outwardly facing trough connected to the tubular support for rotation therewith. The trough cooperates with a surrounding cylindrical shroud to define a radially and axially confined helical extension of the

guide path defined by the laying pipe. When larger diameter rods are being rolled at a lower speed additional guidance beyond that being provided by the laying pipe is unnecessary and could be detrimental. Accordingly the trough is detachably connected to the rotatable support to enable its simple removal.

3. It is not in dispute between the parties that document D1 represents the closest pre-published state of the art. It is the German language family equivalent of FR-A-1 526 997, which is referred to in the introductory description of the contested patent and forms the basis for the preamble of granted claim 1.

The technical problem addressed by this prior art document is to ensure, especially in the event of rods of different diameters being processed, a regular discharge of the rings from the laying head onto the following conveyor. It is therefore proposed to provide, in a manner akin to that of the claimed invention, additional guide means for the rod once it has left the outlet end of the laying tube. These guide means take the form of a worm extension which is fixed to the tubular support for rotation therewith and cooperates with a surrounding shroud. The worm extension comprises a drum-like body member provided with a helically extending guide plate on its outer surface. Two basic modes of operation are described. In the first the outlet end of the laying pipe is angled towards the trailing surface of the guide plate, which therefore acts to brake the rod and ensure orderly discharge of the rings as they are formed. In the second the outlet end is angled towards the leading surface of the guide plate, which therefore can act as a screw conveyor to discharge the tail end of the rod.



It is the first mode of operation portrayed in Figures 1 and 2 of document D1, on which the appellants particularly rely. They argue that an inspection of these figures clearly shows that the guide plate extends over more than one complete revolution so that there is an overlap between its ends which therefore define a trough within the meaning of granted claim 1. It can also allegedly be seen from these figures that the outlet end of the laying pipe is directed so as to discharge the rod into this trough. Thus, in the opinion of the appellants, the only feature which distinguishes the subject-matter of the claim from this state of the art is the requirement that the trough be detachably connected to the rotatable support.

In reply to this the respondents argue that a trough must necessarily be defined by respective side walls, whereas the trough the appellants contend to be present in the prior art laying head is merely defined by the axial gap between overlapping ends of the helical guide plate. In this context the respondents point to the fact that with a helically extending trough according to their understanding of the term its pitch can be made independent of its width, whereas according to document D1 the pitch and the width are substantially equal, differing only by the thickness of the guide plate. They argue that this consideration is significant in the determination of a guide path extension effective to solve the technical problem addressed. However, the Board cannot see any reason, either as a matter of language or of a technical nature, why in general terms the respective walls of a helically extending trough should not be defined by the opposing surfaces of a helically extending guide plate disposed on the outer surface of a body member. The

Board also notes that granted claim 1 itself contains nothing which would allow a distinction from such a helically extending trough on the basis of considerations of its pitch and width.

In view of the above it can be recognised that the laying head of Figures 1 and 2 of document D1 indeed comprises guide means for the rod discharged from the outlet end of the laying pipe, which guide means comprise a radially outwardly facing trough which is connected to the rotatable support and cooperates with a surrounding cylindrical shroud. However, it must be emphasised that the prior art document does not allow a clear determination of either the circumferential extent of this trough or the relative positions of the end of the trough and the outlet end of the laying pipe.

Notwithstanding the above finding with respect to the presence, in general terms, of a helically extending trough in document D1, the Board can nevertheless not agree with the appellants that this trough corresponds in essence to that defined in the characterising clause of granted claim 1, as this would be understood by the person skilled in the art in the light of the description. In particular, the claim requires the trough to define with the shroud a radially and axially confined helical extension of the guide path. Taking account of the object of the invention as discussed above this requirement can only be understood as meaning that the radial and axial confinement provided by the trough and the shroud must be such as to prevent buckling of the tail end of the rod and as a consequence radial or axial extents of the guide path extension which are substantially larger than the

internal dimension of the laying pipe are excluded. Moreover, the upstream end of the trough should represent an essentially direct extension of the guide path in the laying pipe, without significant spacing or change in direction. These requirements are not however met in the laying head disclosed in Figures 1 and 2 of document D1. There, the width of the trough is plainly several times the diameter of the guide path provided for the rod by the laying pipe. Furthermore, the rod leaving the laying pipe is specifically angled towards the trailing surface of the guide plate (in effect the forward sidewall of the trough) and there is no suggestion that the leading surface of the guide plate (the rearward sidewall of the trough) may also come into contact with and serve to guide the rod. As a consequence of the angling of the outlet end of the laying pipe towards the trailing surface of the guide plate there is a significant, and desired, change in direction of the movement of the rod. Lastly, it is by no means clear that the outlet end of the laying pipe is disposed at a position where the rod is discharged into the trough formed between the overlapping ends of the guide plate, and since the rod is only intended to be guided by one of the surfaces of the guide plate, as discussed above, there appears to be no reason why the outlet end of the laying pipe should be disposed in any particular relationship to the trough.

As a result of the above considerations the Board is satisfied that any trough identifiable in the laying head of Figures 1 and 2 of document D1 is not one which with the shroud defines "a radially and axially confined helical extension of the guide path" within the terms of granted claim 1. Nor is there anything in the remainder of the document or in the newly cited

document D5 (which is specifically referred to in document D1) which could have encouraged the person skilled in the art to modify the known laying head in the direction taken by the claimed invention. In these circumstances it is unnecessary to consider to what extent the person skilled in the art may have been led by the teachings of document D6 to mount the guide plate of document D1 in a detachable manner to the drum-like body member or to what extent such an arrangement could be seen as constituting a trough detachably connected to the rotating support within the terms of granted claim 1.

4. In the case law of the Boards of Appeal the introduction at a late stage in the proceedings of evidence relating to a new allegation of public prior use has been viewed with distinct reservation, see for example T 129/88 (OJ EPO 1993, 598) and T 93/89 (OJ EPO 1992, 718). This is particular true where, as in the present case, the allegation stems from the opponent's own activities. The factors which should be taken into account in the exercise of the Board's discretion under Article 114(2) EPC to disregard belatedly submitted evidence with respect to public prior use include the reasons for the late filing, the extent to which the evidence proves the alleged facts and the potential relevance of those alleged facts to the matter at hand.

In the present case the appellants did not file the new evidence until ten months after the filing of the original statement of grounds of appeal and seven months after the respondent's counterstatement. They seek to justify the filing of the new evidence as being a reaction to the argumentation adopted by the Opposition Division in the contested decision,

particularly with respect to the disclosure of document D1. They do not however contend that information with respect to the alleged prior use only re-surfaced after they had filed their statement of grounds of appeal. Indeed, it can be seen from Annex 6.3 to their letter filed on 5 July 2000 that their investigations to obtain the necessary evidence started as early as 1997. Thus in these circumstances the Board can see no good reason for the appellants not having filed the new evidence with their statement of grounds of appeal at the latest.

The appellants have also not presented a coherent and consistent picture of how the alleged public prior use took place, in other words what activities constituted it. In their letter of 3 July 2000 emphasis was placed on the fact that two worm extensions used in trials which took place in the rolling mill of the company Thy Marcinelle in 1979 were still to be found lying against the wall of the building in the region of the rod laying heads. They argued that they would have been visible to outside visitors to the rolling mill, who would have been immediately able to determine their function. At the oral proceedings, however, they argued for the first time that both the delivery of the worm extensions to Thy Marcinelle and the trials performed using them constituted public prior use in their own right.

There is however nothing in the file which points to a "delivery" of the worm extensions to Thy Marcinelle in any normal sense (order, delivery note, record of payment). As for the trials performed with the worm extensions, the evidence on file contains little in the way of detailed information as to their scope, duration

and who was present. The observation of such trials by third parties seems in the circumstances highly improbable. Lastly, the Board cannot accept, on the basis of the evidence before it, that occasional visitors to the rolling mill would have been in the position to assimilate sufficient technical details of the discarded worm extensions to draw adequate conclusions about what their function may previously have been.

In addition to these reservations concerning the lateness of the submissions and their adequacy for establishing public prior use, there are also still doubts as to the form of the laying head/worm extension combination with which the trials were performed. Again, it was at the oral proceedings before the Board that the appellants first produced a model, purportedly corresponding to this combination, which included a modified laying head itself comprising a partial worm track which was complemented by the track on the worm extension.

For all of these reasons the Board therefore decided to disregard the belated submissions concerning the alleged public prior use (Article 114(2) EPC). Furthermore, as a consequence of this, there can be no justification for a remittal of the case to the Opposition Division for further examination.

5. In summary, the Board has reached the conclusion that the subject-matter of granted claim 1 is novel and inventive with respect to the prior art under consideration (Articles 54(2) and 56 EPC).

**Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:

S. Fabiani

F. Gumbel