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Datasheet for the decision of 7 February 2013

Case Number: T 0735/09 - 3.4.02

Application Number: 98121460.4

Publication Number: 916952

IPC: G01N35/04, G01N35/02

Language of the proceedings: EN

Title of invention:
Conveyor system for clinical test apparatus

Applicant:
Siemens Healthcare Diagnostics Inc.

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 0735/09 - 3.4.02

D E C I S I O N
of the Technical Board of Appeal 3.4.02
of 7 February 2013

Appellant: (Applicant)	Siemens Healthcare Diagnostics Inc. 511 Benedict Avenue Tarrytown, NY 10591 (US)
Representative:	Maier, Daniel Oliver Siemens AG CT IP Com E Postfach 22 16 34 80506 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted 17 November 2008 refusing European patent application No. 98121460.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: A. Klein
Members: M. Rayner
B. Müller

Summary of Facts and Submissions

I. The patent applicant has appealed against the decision of the examining division refusing European Patent Application number 98 121 460.4 (=EP-A-0 916 952). The patent application concerns a conveyor system for clinical test apparatus.

The following document, amongst others, has been referred to in the examination and appeal proceedings.

D1 WO-A-96/25712

II. The appellant requested that the decision under appeal be set aside and a patent granted on the basis of a main or one of two auxiliary request. Oral proceedings were requested on an auxiliary basis.

III. Independent claim 1 according to the main request is worded as follows.

"1. A conveyor system for clinical test apparatus comprising,
a) a main transport conveyor defining a closed circuit path of travel in a generally horizontal plane, the closed circuit path of travel permitting objects on the conveyor to repeat the path of travel when the conveyor is moving in one direction, the closed circuit path of travel including a straight line path and a curved path,
b) a plurality of auxiliary conveyor modules, each comprising an auxiliary conveyor defining a straight line path of travel in a generally horizontal plane, the straight line path of travel permitting objects on the conveyor to move from one point to another without retracing any point of travel when the conveyor is

moving in said one direction, said auxiliary conveyor having an upstream end and a downstream end relative to said one direction of movement,
c) said auxiliary conveyor being positioned alongside the straight line path of travel of said first transport conveyor to run in the same direction as said first conveyor,
d) segregation means between the straight line path of said main transport conveyor and said auxiliary conveyor for normally preventing objects from said transport conveyor from moving onto said auxiliary conveyor and vice versa,
e) said segregation means including first and second openings spaced a predetermined linear distance from each other along said straight line path,
f) a divert gate device provided at one of said openings proximate an upstream end of said auxiliary conveyor, said divert gate device having diversion means for diverting movement of objects on said main transport conveyor through said one of said openings in said segregation means to said auxiliary conveyor,
g) an interface gate provided downstream of said one opening and upstream of said other opening in said segregation means, and
h) said other opening providing a flow path that leads directly from said auxiliary conveyor to said main transport conveyor,
said conveyor system including first motor means for moving said main transport conveyor and second motor means independently operable of said first motor means for moving said auxiliary conveyor of said auxiliary conveyor modules said auxiliary conveyor modules being detachably fastened to said main transport conveyor."

The wording of claims according to the auxiliary requests of the appellant is not given for the reason set out in section 4 of the reasons below.

IV. During oral proceedings before the examining division, among other things, the division expressed the following view (point 5, first four lines).

Document Dl discloses spur conveyors (27, 28), which include straight line paths positioned alongside the straight line path of travel of the main conveyor (1).

V. The decision under appeal contains the following subject matter relevant to the present appeal.

Novelty

The last feature of claim 1, "auxiliary conveyor modules being detachably fastened to said main transport conveyor", is not explicitly mentioned in document D1.

With respect to features (b) and (c) of claim 1, the division considered the inner lane (2), acting as a transport lane, and the outer lane (3), acting as an accumulator (page 18, line 17- 20), to be able to be seen as main transport conveyor and auxiliary conveyor. Furthermore, document D1 discloses placing both lines immediately adjacent to each other and using single lane Flex-Link XSTM style conveyor belts running side by side for transfer from the transport lane to the spur conveyor lines (page 13, lines 11 - 23). A skilled person in the field of automated sample transportation is well aware of the advantages and disadvantages of longitudinal or perpendicular arrangements of conveyor belts in a given space. Therefore the division was of

the opinion, that features b) and c) are not novel over the disclosure of document D1.

Inventive Step

The distinguishing feature over document D1 is thus the explicit wording "said auxiliary conveyor modules being detachably fastened to said main transport conveyor". Document D1 discloses (page 24, line 6 -9) that "spurs (27, 28) and line 1 may be of modular construction, such that short lengths of the line including a small number of means controlled by control system 17, may be controlled as a unit". A skilled person, reading this passage in conjunction with the alternative of two or more possible accumulator lines (page 23, line 23 - 26) and the control means 17 controlling selection means and routing means (page 20, line 1 - 6), would not consider that only the transport lane is of modular construction, but would take the hint at a modular construction of the entire assembly of transport lane, accumulator lane and spur lines. A modular construction implies that modules are detachably fastened and therefore the subject-matter of claim 1 is not considered to be inventive over document D1, taken in combination with the common knowledge of a skilled person in the field of transporting clinical samples in an automated apparatus. Furthermore the applicant did not provide evidence for an unexpected effect, but merely the usual advantages of flexibility, simplicity and of a modular construction.

VI. In support of its main request, the appellant advanced arguments including the following.

The claims correspond to those refused by the examining division.

Novelty

Novelty of the subject matter of claim 1 is not disputed by the examining division in relation to the last feature of the claim, "auxiliary conveyor modules being detachably fastened to said main transport conveyor". In addition, claim 1 differs from the prior art according to document D1 by virtue of the features
b) a plurality of auxiliary conveyor modules ... ,
and
c) said auxiliary conveyor being positioned alongside ... .

The present invention comprises auxiliary conveyors that are operable independently of the main conveyor (i.e. with their own motor means) and are placed alongside the main conveyor in a generally parallel path of travel. In its decision of refusal, the examining division considered that in document D1, the inner lane 2 and the outer lane 3 (Fig. 1, p. 18, lines 17-20) could be seen as main and auxiliary conveyor respectively, the main and auxiliary conveyor being placed alongside one another. However, lanes 2 and 3 represent different lanes of the same conveyor line driven by the same motor means. Document D1 refers to "inner and outer lane" and "main line 1 and spur line 27, 28" being two different systems. The two lanes are integral to the entire main conveyor line and do not have the nature of being separate conveyor systems. They are merely division means placed over the conveyor belt thus creating two lanes of the same conveyor (page 17, lines 20-21, "the main line 1 is divided into two lanes by a dividing wall 6"). They cannot be viewed as independent main conveyor and auxiliary conveyors. As the inner and outer lane 2, 3 stretch over the

entire course of the main line, neither one of them can be viewed as an auxiliary conveyor, much less as a plurality of auxiliary conveyors. Thus document D1 does not disclose feature (b) of claim 1. Independently, the examining division then viewed the spur line 27, 28 as "auxiliary conveyor". As the spur lines 27, 28 (Fig. 1) are placed perpendicular to the main line, they are not alongside the main line, so that the feature (c) of claim 1 is not disclosed by document D1.

Therefore, the subject matter of the claim is new not only by virtue of the feature acknowledged by the examining division but also by virtue of features (b) and (c).

Inventive Step

Document D1 can be regarded as closest prior art, since it is in the same area of technology and shares some of the technical features. The invention differs from document D1 in that a plurality of linear auxiliary modules are provided which are detachably fastened to the main line. This allows the subsequent addition and removal of further auxiliary conveyors according to a customer's needs. This offers improved flexibility in the system. For example, a customer may initially buy a basic system containing only a few auxiliary conveyors and add on additional auxiliary conveyors as demand for capacity increases. Also, the auxiliary conveyors may be serviced and repaired independently of the system, i.e. the system as a whole can be kept running, thus reducing down time. Further, the auxiliary conveyors of the invention may be of the same design and construction thus reducing costs of an auxiliary conveyor. Thus, the present invention solves the

problem of providing a more flexible and convenient system.

Document D1 mentions that the conveyor lines may be constructed in modules (page 16, line 8), but does not mention linear modules which can be detachably fastened to the main line. Rather document D1 seems to indicate that the conveyor line itself is made up from modular sections ("line may be constructed in modules", "each module comprising a region of conveyor"). Document D1 discloses that "the spurs and line may be of modular construction, such that short lengths of line may be controlled as a unit (see page 24, line 6-8)" which again indicates that the conveyor line itself is of modular construction. This is done to improve control and minimize wiring of a unit, however, and does not disclose or hint at the possibility to detachably connect a plurality of auxiliary conveyors. Document D1 does not mention an "auxiliary conveyor module" with a linear construction, "defining a straight line" in the language of claim 1, which is detachably fastened to the main line. There is no mention or hint of detachable units. Further, although document D1 may show something akin to an independently motorized auxiliary conveyor (Figure 1 and description "Spur conveyor line 27, 28", page 19, line 13, "turntable 50, driven by a motor", page 21, line 30), document D1 does not disclose this auxiliary conveyor as being "detachably fastened", nor is the "spur line 27" according to Figure 1 "placed alongside" a main conveyor (i.e. feature (c) of claim 1). The features "detachably fastened", independent motor means for the auxiliary conveyor and placement of the auxiliary conveyor "alongside" the main conveyor cooperate to provide a space saving, flexible and convenient system, where auxiliary conveyors can be added, as customers'

needs grow, removed for maintenance without shutting down the entire system. Nowhere is such a solution hinted at or shown in the prior art.

Therefore the skilled person would not have solved the above problem and arrived at the present invention without exercising an inventive step.

Reasons for the Decision

1. The appeal is admissible.

2. Novelty

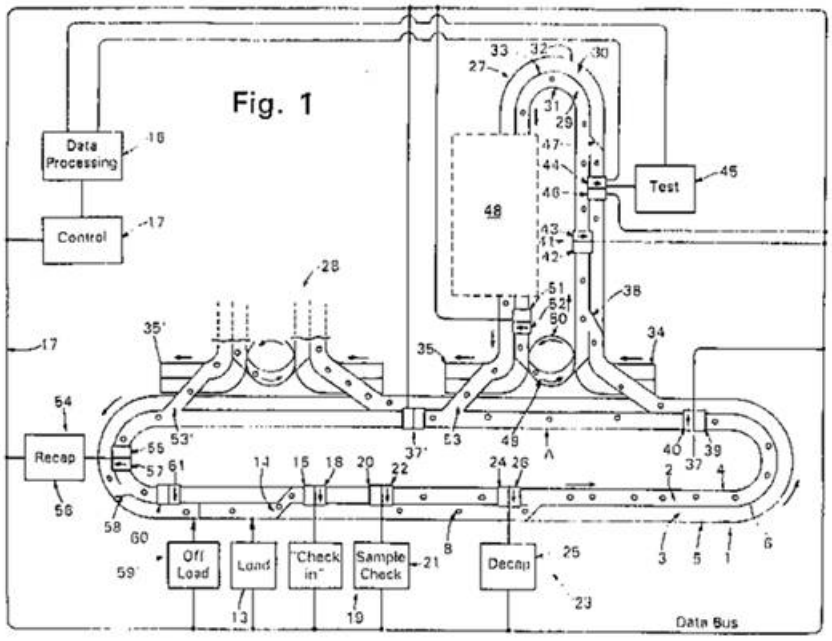
2.1 The board has no reason to depart from the assessments of the examining division and appellant that document D1 can be considered the closet prior art document.

2.2 The examining division and appellant agree that the feature of claim 1 "auxiliary conveyor modules being detachably fastened to said main transport conveyor" is novel.

2.3 Document D1 discloses an elongate closed circuit first conveyor (1) divided into an inner transport (2) and an outer (3) accumulator lane. Also disclosed are similar smaller elongate spur conveyors (27, 28), also divided into lanes (29, 30), generally arranged along the length of but perpendicularly to the main conveyor. The spur conveyors have an inverted "T" portion bent parallel to the first conveyor (34,35), so that a turntable (50) is needed for containers repeating transport in the spur. A divider crosses the feeder such that the accumulator lane on the first conveyor can be switched to the transport lane of the spur or vice versa.

Moreover, page 23, lines 23 to 27 recite that "Although line 1 is described as having one accumulator layer 3, it could alternatively have two or more accumulator lanes, which may for example be further lanes parallel to those shown, or may alternatively be elevated above the line 1, for example linked to lanes 2,3 by ramped sections of conveyor belt.".

The disclosure of document D1 is illustrated as follows in Figure 1 thereof:



2.4 With respect to features (b) and (c), the board reads the decision of the examining division to refer to the inner transport lane (2) disclosed in document D1 as being the main conveyor and the outer accumulator lane (3) as being the auxiliary conveyor(s) in the sense of claim 1. This is not very convincing because as the appellant argues, lanes (2) and (3) are not a plurality of auxiliary conveyor modules with independently operable motors but part of the same conveyor. Just one conveyor for main and auxiliaries, with an outer lane

encompassing an inner lane, is neither a plurality nor, despite any subdivision or spatial arrangement, auxiliaries arranged "alongside" in the nautical sense of different ships next to and longitudinally parallel to one another. This argument of the examining division did not therefore persuade the board of lack of novelty of features (b) and (c) of claim 1.

2.5 The division also referred to page 13, lines 11 to 23 of document D1 which recite the following:-

"As regards the interface device for transferring containers from the first conveyor line to the spur conveyor line, this may comprise a transfer conveyor onto which the divertor means may route containers from the first line transport lane and thus into the transfer lane of the spur line. The interface device may be anything which is capable of transferring the containers from the first line to the spur. Manual means can be used. It is preferred to place both lines immediately adjacent to each other on the same level and use a mechanical device which can move the containers from one belt to the other without interrupting the normal movement of the containers. A preferred example is to use a single lane FlexLink XS style conveyor belts running side by side with a set guide rail which routes prior selected containers of the first line to the selected spur's conveyor belt. Alternative routing means will be apparent to those skilled in the art, such as motor driven turntables, or turntables driven by the conveyor line."

2.6 It is not very clear how this disclosure is intended to fit with the argument relating to the inner and outer lanes. The division considered using single style conveyor belts running side by side for transfer from

the transport lane to the spur conveyor lines (e.g. next to the bend in spur lines 27 and shown as 34 and 35) pertinent, but does not explain exactly how. The feeders, which are part of the inverted "T" of the spur conveyors as referred to above are to permit changing from the first to the spur conveyor. The return of the feeders is vertically below them, this is why the turntable (50) is needed. However, in the division's analysis, the main and auxiliary conveyors are already disclosed by the lanes of the first conveyor, so the board does not see how the "T" shaped feeding part of the spur conveyor is relevant. The board does not therefore consider this reference to support or make persuasive the argument of the division.

2.7 The division's reference mentioned in section 2.5 seems associated with the opinion advanced during oral proceedings in relation to the spur conveyor. In that argument, although not entirely clear, the spur conveyors can be taken to be understood as auxiliary conveyor modules to the first conveyor. In this case, however, the spurs 27 and 28 are perpendicular to and not alongside the first conveyor (thus like a ship's bow pointing towards the midside of another ship and not alongside). A skilled reader would not have focused just on the feeder part to draw the conclusion that the spur is parallel. Thus, the spurs cannot be considered to be auxiliary conveyor modules in the sense of claim 1, and even if they were, the "alongside" feature, i.e. feature (c) would be novel.

3. Inventive Step

3.1 Having determined, in the board's view correctly, features that are novel, the appellant reached the view that the invention solves the problem of providing a

more flexible and convenient system. In the board's view, recognising this problem is not inventive because it amounts to no more than well known desiderata for a conveyor system.

3.2 Nevertheless, while the skilled person could have made a lot of changes to the system disclosed in document D1, the question is whether this person, in the light of that document's teaching really would have made changes corresponding to the novel features identified by the appellant. This does not seem likely to the board. In the case of the argument that the accumulator lane disclosed in document D1 corresponds to the auxiliary conveyor module(s), the board has not seen in document D1 any reason, nor has it been offered any reason by the examining division as to why, having set up a twin or possibly multilane single conveyor, the skilled person would have removed the accumulator lane and replaced it with auxiliary conveyor module(s). Moreover, in relation to the spur conveyors corresponding to the auxiliary conveyor modules claimed, having gone to the trouble of making the inverted "T" shape feeders, the board has not seen in document D1 any reason, nor has it been offered any reason by the examining division as to why the skilled person would have dispensed with the feeder parts and arranged the spurs parallel to the first conveyor, at the same time having to remove the accumulator lane.

3.3 The division found the following passage (page 24, lines 6 to 9) relevant to its consideration of inventive step with reference to the "detachably fastened" feature of claim 1, which it had acknowledged as novel.

"The spurs 27, 28 and line 1 may be of modular construction, such that short lengths of the line, including a small number of means controlled by control system 17, may be controlled as a unit. This modular construction minimizes the amount of interconnective wiring that is necessary."

3.4 In the board's view, it does not make much sense to consider the accumulator lane detachable from the transport lane in the disclosure of document D1 because they are the parts of the same conveyor. Modular construction refers to a short length of the line being modular, not to any such detachment. Moreover, a short length of the line is not understood by the skilled person to mean an entire spur is a detachable module. The appellant's understanding of page 16, line 8 and page 24, lines 6 to 8 and its assessment that that it is rather the wiring that is concerned is more plausible. Therefore, the board does not see this passage as suggesting that the spur is removable.

3.5 Therefore, while the novel features of claim 1 could result from modifications of the system disclosed in document D1, the board is not convinced such modification would have been made in an obvious way. The appellant submitted that the features claimed cooperate to provide a space saving, flexible and convenient system, where auxiliary conveyors can be added, as customers' needs grow, removed for maintenance without shutting down the entire system. No reason apart from hindsight could suggest to the skilled person that the way of doing this was expected as the examining division implied. Accordingly, the reasoning presented in the decision under appeal is not persuasive. In the board's view, the remaining documents in the file do not come closer to the claimed

subject matter than document D1. The board therefore concluded that the subject matter of claim 1 can be considered to involve an inventive step.

4. The board sees, moreover, no other reason for objection to the application. Therefore, the appeal on the basis of the main request succeeds. Since the main request succeeds, it is not necessary to consider the auxiliary requests, nor are the oral proceedings requested on an auxiliary basis necessary.

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 grant a patent in the following version:

Description

Pages 1, 2, 3, 5 to 27 as originally filed;
Pages 2a and 4 as submitted with the letter of 19 March 2008;

Claims

1 to 6 as submitted with the letter dated 17 March 2009 (main request); and

Drawings

Figures 1 to 24 as originally filed.

The Registrar: The Chairman:

M. Kiehl A. Klein

Decision electronically authenticated