

NOTE: This disposition is nonprecedential.

# United States Court of Appeals for the Federal Circuit

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IN RE: HILL-ROM SERVICES, INC.,  
*Appellant*

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2015-1305

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. 90/012,399.

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Decided: December 2, 2015

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GARRET A. LEACH, Kirkland & Ellis LLP, Chicago, IL,  
argued for appellant. Also represented by PAUL DANIEL  
BOND, BRIAN VERBUS.

KAKOLI CAPRIHAN, Office of the Solicitor, United  
States Patent and Trademark Office, Alexandria, VA,  
argued for appellee Michelle K. Lee. Also represented by  
NATHAN K. KELLEY, STACY BETH MARGOLIES.

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Before O'MALLEY, PLAGER, and BRYSON, *Circuit Judges*.  
BRYSON, *Circuit Judge*.

This is an appeal from a decision of the Patent Trial  
and Appeal Board in an ex parte reexamination proceed-  
ing. The Board held various claims of a patent owned by

appellant Hill-Rom Services, Inc., to be invalid for obviousness. We affirm.

## I

The patent in suit, Hill-Rom's U.S. Patent No. 5,771,511 ("the '511 patent") is entitled "Communication Network for a Hospital Bed." The patent is directed to a hospital bed featuring a peer-to-peer communication network with a plurality of connection points and modules. Each module is electrically coupled to a selected connection point of the communication network, and each module is configured to communicate over the network with selected other modules. Each module performs a specific function relating to the operation of the bed. For example, different modules can move different portions of the bed deck in various directions, deflate or inflate the mattress, calculate the patient's weight, and detect when the patient exits the bed.

Following the reexamination proceeding, the examiner rejected various claims of the '511 patent. The examiner rejected each of the claims as obvious in view of certain combinations of prior art references. Two of the examiner's rejections are at issue on this appeal—the combination of PCT Application No. WO 94/27544 ("Travis") and U.S. Patent No. 5,596,437 ("Heins"); and the combination of Heins and a 1993 manual published by the Hill-Rom Company, Inc. ("the Hill-Rom Manual"). The Patent Trial and Appeal Board affirmed both of those rejections.

Claim 1 of the '511 patent is representative. It recites the following:

1. A bed comprising:  
a base frame;  
a deck coupled to the base frame for supporting a body;

a peer-to-peer communication network having a plurality of connection points;

a plurality of modules, each module being electrically coupled to a selected connection point of the peer-to-peer communication network, each module being configured to perform a dedicated function during operation of the bed, and each module being configured to communicate over the peer-to-peer communication network with selected other modules, and each module including a processor circuit configured to transmit information to any other module and to receive information from any other module over the peer-to-peer communication network.

The Travis reference is directed to an adjustable hospital bed having various modules connected to a serial communication network. Each module is electrically coupled to a connection point on the network. The various modules connect to computers that coordinate the various functions of the modules, such as measuring the weight of the patient and determining whether the patient has left the bed. Travis uses a “master-slave” configuration, in which a single “master controller” controls the operation of the various modules.

The Heins reference is directed to an X-ray device with a moveable patient table. Heins employs a peer-to-peer communication network known as the Controller Area Network (“CAN”) protocol to control the modules, or “nodes,” on the X-ray device. One of the functions disclosed in Heins is moving the patient table, which is done by sending a command over the network from one node to another. The command allows the patient table to be moved in multiple directions. Another function of the system is to transmit information about the patient table position so that it can be displayed. The nodes in Heins are stated to be in mutual communication with other

nodes, so that each node can transmit data to the other nodes at any time, without having to wait for authorization to transmit. Heins states that systems using the CAN protocol are capable of high transmission speed and reliability, and that they allow individual components to be easily added, substituted, or removed.

The Hill-Rom Manual discloses an adjustable hospital bed having a frame and a deck coupled to the frame. The bed has several modules, each configured to perform a particular function, such as positioning various portions of the bed, inflating or deflating the mattress, and weighing the patient. The Hill-Rom Manual further discloses that the adjustable features are governed by circuit board logic and controlled by a control console.

In rejecting the disputed claims of the '511 patent as obvious in view of Travis and Heins, the examiner determined that it would have been obvious to one of ordinary skill in the art to substitute the peer-to-peer communication network taught by Heins for the master-slave network used in Travis. The motivation for such a substitution, the examiner explained, would be to obtain faster processing speeds and reliable transmission of data, while retaining the ability to add or delete subsystems easily.

The Board upheld the examiner's rejection in view of Travis and Heins. In so doing, the Board upheld without comment the examiner's conclusion that Travis was prior art to the '511 patent, although that issue was sharply contested by the parties. *See* 37 C.F.R. § 41.50(a)(1) ("The affirmance of the rejection of a claim on any of the grounds specified constitutes a general affirmance of the decision of the examiner on that claim, except as to any ground specifically reversed."). The examiner found unpersuasive Hill-Rom's evidence that its inventors conceived of the invention prior to the filing date of Travis and that the inventors exhibited diligence from that time

until they constructively reduced the invention to practice.

The Board analyzed Travis and Heins, and it concluded that the disputed claims would have been obvious in light of the combination of those references. The Board then moved to the examiner's second ground of rejection, which was that the disputed claims would have been obvious in light of Heins and the Hill-Rom Manual. On that issue, the Board held that the examiner was correct in finding that the Hill-Rom Manual discloses a communication network in connection with a hospital bed. The combination of the Hill-Rom Manual and the peer-to-peer network of Heins, the Board held, rendered the disputed claims of the '511 patent obvious.

The Board further ruled that, even if the Hill-Rom Manual were not regarded as having disclosed a communication network, the claims would still be rendered obvious by combining Heins's peer-to-peer network with the Hill-Rom Manual's teachings of a user-controlled bed. The Board found that, like the X-ray device described in Heins, the bed disclosed in the Hill-Rom Manual requires user input to be adjusted. The Board then concluded that it would have been obvious to implement Heins's communication network in the bed described in the Hill-Rom Manual so as to control the bed in the manner described in the '511 patent.

## II

On appeal, Hill-Rom focuses much of its attention on the examiner's finding that Travis was prior art to the '511 patent. Hill-Rom argues that the examiner was incorrect in finding that Hill-Rom had failed to show both prior conception and diligence from before the filing date of Travis until the filing of the application for the '511 patent.

We find it unnecessary to reach that question, because the Board's second ground for decision, based on the combination of Heins and the Hill-Rom Manual, provides a sufficient basis for upholding the Board's decision.

With respect to the combination of Heins and the Hill-Rom Manual, Hill-Rom first contends that the Board erred in finding a motivation to combine the two references. In particular, Hill-Rom challenges the Board's reliance on the disclosure that the peer-to-peer communication network in Heins offered "greater processing speeds" than conventional communication networks. Hill-Rom's argument is that Heins does not expressly disclose that the processing speeds in its peer-to-peer system are greater than the processing speeds in, for example, a master-slave network such as Travis.

Hill-Rom acknowledges that Heins touts the high transmission speed of its peer-to-peer controller area network and the "high transmission reliability" of that system. *See* Heins abstract (CAN protocol results in "fast and reliable data transmission"); col. 1, ll. 30-35 ("According to the CAN protocol, each node can transmit data to each of the other nodes at any time (Multimaster principle) without having to wait for an authorization to transmit. The exchange of information accordingly takes place very quickly . . ."); *id.*, ll. 36-54 ("data nodes working in accordance with the CAN protocol have a high transmission speed as well as a high transmission reliability"); col. 2, ll. 6-11 ("individual components can be changed in a simple manner while a high data speed is maintained"); *id.*, ll. 24-25 ("high access speed to other nodes [is] provided by systems according to the CAN protocol"). Hill-Rom argues, however, that the references in Heins to "high transmission speed" do not provide a motivation to combine Heins with prior art systems not involving peer-to-peer networks, because Heins did not say that the "high" transmission speeds were "higher" than the speeds achieved in other systems.

We do not find Hill-Rom's argument persuasive. From context, it is clear that the statements in Heins about the system's high transmission speed were meant to make the point that the system was faster than conventional systems, as the examiner found. At minimum, that inference was a fair one for the examiner to draw from Heins.<sup>1</sup> Moreover, the Board did not rely solely on the greater speed of the peer-to-peer network as giving rise to a motivation to use the Heins network to control a hospital bed. It noted that in addition to increased speed, the examiner had found that a skilled worker would have had reason to use the peer-to-peer network because of its greater reliability and its ability to easily add or delete subsystems or modules.

Hill-Rom next contends that there was no evidence in the reexamination proceeding that a person of ordinary skill in the art in 1994 had the ability to implement Heins's network on a hospital bed. In support of its argument, Hill-Rom points to the declaration of Michael J. Hayes, an engineer for Stryker Corporation, the third-party requester of the reexamination. In particular, Hill-Rom notes that although Mr. Hayes said that his company chose the CAN network protocol because of the various advantages of that system, he stated that the company had "worked with a third-party design firm to assist in the design and implementation of the CAN network on our hospital beds." According to Hill-Rom, that statement belies Mr. Hayes's declaration that a person of skill in the art had the capacity to adapt the CAN network to a hospital bed.

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<sup>1</sup> The examiner also cited U.S. Patent No. 4,992,926 ("Janke") to show that a peer-to-peer communication network could be substituted for a master-slave network in order to provide greater processing speeds. *See* Janke, col. 1, ll. 58-64; col. 2, ll. 6-12.

The Board noted that Mr. Hayes testified that he had engaged a third-party firm to implement the CAN design because it was more cost effective than implementing the design in-house, not because implementing the design was beyond the skill of an ordinary artisan. That explanation is reasonable, and the Board was not required to conclude that Mr. Hayes's decision to work with a third-party design firm indicates that a person of skill in the art could not have adapted the CAN network to a hospital bed.

In finding that a person of ordinary skill would have been able to adapt the Heins peer-to-peer network to the Hill-Rom bed, the examiner and the Board were entitled to consider the similarity between the Heins X-ray system and the Hill-Rom hospital bed. As Heins explains, the various modules in the Heins network move the X-ray table in various ways, including tilting it, moving it laterally, and moving it longitudinally. Besides the fact that both the X-ray table and the hospital bed are adjustable medical devices designed to support a patient's body, the functions performed by the modules in Heins are very similar to the functions performed by the modules in the Hill-Rom system, which includes moving the bed frame in various directions and angles. Given the similarity in the roles played by the modules in the two systems, it was reasonable for the examiner and the Board to conclude that adapting the Heins peer-to-peer network to the Hill-Rom bed was within the capacity of a person of ordinary skill at the time of the invention.<sup>2</sup>

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<sup>2</sup> In addition to Heins, the examiner noted that a 1994 article by van Woerden taught that the use of a CAN communication system as a peer-to-peer network was known to be well suited for medical rehabilitation applications, such as a wheelchair.



### III

Hill-Rom next contends that the Board relied on an unreasonable construction of the term “communication network” when it affirmed the examiner’s finding that it would have been obvious for one of ordinary skill in the art to substitute the peer-to-peer communication network taught by Heins for the network in the Hill-Rom Manual.

Importantly, the Board regarded the combination of Heins and the Hill-Rom Manual to render the disputed claims obvious regardless of whether the electrical network described in the Hill-Rom Manual is considered a “communication network.” The electrical network disclosed in the Hill-Rom Manual has to be assessed for what it is, not for what it is called. The question whether the Board was correct to call it a “communication network” therefore does not affect the Board’s analysis. What the Hill-Rom Manual discloses is a hospital bed with a number of modules that are controlled by an electrical system. Hill-Rom complains that the electrical control system described in the Hill-Rom Manual is too remote from the control system recited in the disputed claims, because the control system of the Hill-Rom Manual operates through simple changes in logical states, not more complex signals that Hill-Rom refers to as “communications.”

While it may be reasonable to regard a system that communicates directions to its various modules through changes in logical states as a simple form of communication network, it is not necessary to characterize the disclosure of the Hill-Rom Manual in that manner. What matters is whether it was reasonable for the Board to find that it would have been obvious for a person of skill in the art to implement the peer-to-peer network of Heins to perform the control functions on the multi-module electrically controlled hospital bed described in the Hill-Rom Manual. For the reasons given by the Board, we conclude that it was.

The Board noted that a Hill-Rom engineer described in some detail the electrical control system disclosed in the Hill-Rom Manual. He explained that the logic control board of the system receives signals “indicative of user inputs from the siderails and the footboard [of the hospital bed] and according to predefined logic, determines whether to operate the various motors on the bed.” The logic control board ultimately operates the various motors on the bed that perform the designed functions or detect particular conditions on the bed.

The Board concluded that even if that electrical control system is not regarded as a “communication network,” the bed of the Hill-Rom Manual “still requires user input to be adjusted as does the X-ray device in Heins.” Based on its extensive analysis of Heins at an earlier point in its opinion, the Board upheld the examiner’s finding “that it would have been obvious to implement Heins’s communication network in the bed described in the Hill-Rom Manual for its known and expected functions in controlling a medical device.”<sup>3</sup>

We sustain the Board’s decision on that ground. The evidence regarding Heins showed that it satisfied the

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<sup>3</sup> In particular, the examiner found that “using known methods of engineering, a person of ordinary skill in the art could have added a prior art communication network to a hospital bed, and the results of such a combination would have been predictable. Those results would have been predictable because communication networks were known to operate in predictable, well-understood ways in a variety of different fields, including the medical field.” Moreover, the examiner noted that the claims of the ’511 patent were broadly directed a peer-to-peer network and that the specification “does not describe any significant modifications required to allow a peer-to-peer network to work in a hospital bed.”

limitations of the disputed claims regarding the peer-to-peer communication network and the “plurality of modules . . . electrically coupled to a selected connection point of the peer-to-peer communication network.” ’511 patent, col. 22, ll. 20-23. The evidence regarding the Hill-Rom Manual showed that it satisfied the limitations of the disputed claims regarding the bed with an articulating deck coupled to the frame having discrete movable sections.

The issue for the examiner and the Board was whether it would have been obvious for a person of skill at the time of the invention to combine those references. We hold that the Board properly sustained the examiner’s conclusion that the disputed claims would have been obvious in light of the Hill-Rom Manual and Heins. The Board’s decision was justified in light of the examiner’s findings that (1) the bed of the Hill-Rom Manual already had an electrical control system controlling its various functions, such as moving the sections of the bed and weighing the patient; (2) the X-ray device of Heins had a peer-to-peer communication network that controlled the functions of the system, including moving the patient table in various ways; and (3) the peer-to-peer communication network had known advantages over other communication networks, such as master-slave networks.

#### IV

Hill-Rom raises a separate legal argument with respect to the Board’s decision that the disputed claims would have been obvious in light of the Hill-Rom Manual and Heins even if the electrical control system of the Hill-Rom Manual were not considered a “communication network.” Hill-Rom argues that the Board’s decision in that regard constituted a new ground of rejection and for that reason the Board’s decision cannot be sustained on that ground.

In response, the Director of the Patent and Trademark Office (“PTO”) points out that, by regulation, a party that wishes to raise the claim that the Board has adopted a new ground of rejection must do so by filing a request for rehearing before the Board. Failure to file a timely request for rehearing, according to the regulation, “will constitute a waiver of any arguments that a decision contains an undesignated new ground of rejection.” 37 C.F.R. § 41.50(c).<sup>4</sup>

Hill-Rom admits that it did not file a request for rehearing on the “new ground of rejection” issue. Moreover, it does not argue that the regulation is somehow inapplicable to the facts of this case. Rather, it argues that the regulation is invalid “because it restricts this Court’s ability to review a final decision over which the Court has jurisdiction.”

We reject Hill-Rom’s legal challenge to the regulation. Under well-settled principles of administrative law, parties who seek to raise issues on judicial review of administrative action ordinarily must first exhaust their administrative remedies by raising those issues before the agency in accordance with the prescribed administrative procedures. *See Woodford v. Ngo*, 548 U.S. 81, 88-90 (2006); *McKart v. United States*, 395 U.S. 185, 193 (1969); *United States v. L.A. Tucker Truck Lines*, 344 U.S. 33, 37 (1952). Congress has authorized the PTO to promulgate regulations governing “the conduct of proceedings in the Office,” 35 U.S.C. § 2(b)(2)(A). Pursuant to that authority, the PTO issued its regulation requiring parties to raise “new ground of rejection” arguments through petitions for

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<sup>4</sup> The current version of 37 C.F.R. § 41.50(c) was promulgated after this court’s decision in *In re Stepan Co.*, 660 F.3d 1341 (Fed. Cir. 2011). As Hill-Rom acknowledges, the current version of the regulation applies to this case.

rehearing. 37 C.F.R. § 41.50(c). That regulation imposes a binding exhaustion requirement on parties seeking to raise such arguments on judicial review. *See Sims v. Apfel*, 530 U.S. 103, 108 (2000) (“[I]t is common for an agency’s regulations to require issue exhaustion in administrative appeals.”). And when regulations do so, “courts reviewing agency action regularly ensure against the bypassing of that requirement by refusing to consider unexhausted issues.” *Id.* Applying those principles, this court has declined to address issues that were not raised on a timely basis before the Board of Patent Appeals and Interferences (now the Patent Trial and Appeal Board). *In re DBC*, 545 F.3d 1373, 1378-79 (Fed. Cir. 2008).

Both the Supreme Court and this court have explained that the exhaustion requirement serves two important policies. First, it protects administrative agency authority by giving the agency “an opportunity to correct its own mistakes with respect to the programs it administers before it is haled into federal court,” and by discouraging “disregard of [the agency’s] procedures.” *McCarthy v. Madigan*, 503 U.S. 140, 145 (1992). Second, it promotes efficiency because it allows claims to be resolved more quickly and economically before the agency, rather than through litigation in federal court. *Id.*; *see also Palladian Partners, Inc. v. United States*, 783 F.3d 1243, 1254-55 (Fed. Cir. 2015).

The PTO’s rule requiring “new ground of rejection” claims to be first raised before the Board rather than this court serves both of those purposes. First, it gives the Board an opportunity to address the claim and provide a response to the assertion that the ground of rejection is new. Second, it allows for the efficient disposition of that issue before the agency; the agency might either sustain the objection or explain, perhaps to the satisfaction of the patentee, that the ground of rejection was not, in fact, new. And even if court review follows, “exhaustion of the administrative procedure may narrow the issues and

‘produce a useful record for subsequent judicial consideration.’” *Palladian Partners*, 783 F.3d at 1255, quoting *Woodford*, 548 U.S. at 89.

In its brief, Hill-Rom does not cite any of this authority. Instead, relying on *Adams Fruit Co. v. Barrett*, 494 U.S. 638 (1990), and *Nagahi v. INS*, 219 F.3d 1168 (10th Cir. 2000), Hill-Rom contends that the PTO’s regulation requiring exhaustion of “new ground of rejection” claims is unlawful because it imposes an impermissible restriction on the court’s jurisdiction.

Those cases provide no support for Hill-Rom’s position. In *Adams Fruit*, the Supreme Court declined to defer to the views of the Department of Labor as to whether a federal statute creating a private right of action preempted a state statute creating an exclusive administrative remedy. The Court explained that “Congress has expressly established the Judiciary and not the Department of Labor as the adjudicator of private rights of action arising under the statute,” and that it would be “inappropriate to consult executive interpretations of [the statute] to resolve ambiguities surrounding the scope of [the statute’s] judicially enforceable remedy. 494 U.S. at 649-50. That decision does nothing to change the well-settled principle that a party must exhaust its administrative remedies before raising a particular issue on judicial review of an agency’s decision.

The *Nagahi* case is likewise inapposite. In that case, the Tenth Circuit held that the Immigration and Naturalization Service could not impose a statute of limitations on judicial review that was shorter than the limitations period provided by the Administrative Procedure Act. Thus, the *Nagahi* case stands for the unsurprising principle that an agency rule cannot override a statutory provision. Nothing in that case suggests that the requirement of exhausting administrative remedies impermissibly intrudes on the jurisdiction of the reviewing court. Sub-

sequent decisions by the Tenth Circuit make clear that exhaustion requirements are fully applicable to proceedings before the Immigration and Naturalization Service. *See Garcia-Carbajal v. Holder*, 625 F.3d 1233, 1236-38 (10th Cir. 2010) (“It is a fundamental principle of administrative law that an agency must have the opportunity to rule on a challenger’s arguments before the challenger may bring those arguments to court.”); *Torres de la Cruz v. Maurer*, 483 F.3d 1013, 1022 (10th Cir. 2007) (“On a petition for review to this court, we will not permit the petitioner to circumvent proper procedural requirements of the [Board of Immigration Appeals] by presenting contentions that were procedurally barred by the Board.”); *Galvez Pineda v. Gonzalez*, 427 F.3d 833, 837 (10th Cir. 2005) (“Failure to exhaust administrative remedies by not first presenting a claim to the [Board of Immigration Appeals] deprives this court of jurisdiction to hear it.”).

There is nothing unreasonable about the PTO’s rule requiring that “new ground of rejection” claims be raised in a request for rehearing. It is far more efficient to proceed in that manner than to have the case proceed to judicial review and then have the “new ground of rejection” issue decided without input from the Board. Accordingly, we hold that by failing to file a petition for rehearing, Hill-Rom has waived its “new ground of rejection” claim.

**AFFIRMED**