

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GORDON A. NAGLE

Appeal No. 1999-0194
Application No. 08/436,626

HEARD: MARCH 8, 2000

Before ABRAMS, STAAB, and GONZALES, *Administrative Patent Judges*.

STAAB, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 1-27, all the claims currently pending in the application.

The Invention

Appellant's invention pertains to a precast concrete bridge diaphragm. A bridge diaphragm is a component of a

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bridge that extends transversely between the beams that support the deck of the bridge. Bridge diaphragms resist, for example, rotation of the longitudinal beams about their axes when struck on their lower edges, for example, by an overheight truck (specification, page 3). With reference to appellant's Figure 1, which illustrates the underside of a bridge, diaphragms 18a-18c and 20a-20c can be seen located between concrete I-beams 14a-14d. At the time of appellant's invention it was known to use "cast-in-place" concrete bridge diaphragms, that is, diaphragms that are made in forms placed where the members are to remain when in service. Appellant's invention pertains to "precast" concrete bridge diaphragms, i.e., diaphragms that "are manufactured in plants especially equipped for such purpose and then moved into place on the bridge" (specification, page 4).

The appealed claims set forth appellant's invention in a variety of ways, some of which expressly call for a precast diaphragm and others of which do not. For example, claim 1 is directed to a *precast* concrete bridge-diaphragm and claim 11 is directed to a method of bridge construction comprising the

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step of placing a *precast* concrete diaphragm, while claim 10
is directed to "[a] concrete bridge diaphragm containing a

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prestress[ed] strand" and claim 16 is directed to a method of bridge construction comprising the step of "placing a concrete diaphragm between longitudinal bridge beams."¹

The Evidence

No prior art patent documents are relied upon by the examiner in support of the rejections made in the final rejection (Paper No. 8). Instead, the examiner relies on information contained in the declaration on April 19, 1995 of Heinrich O. Bonstedt (the Bonstedt declaration) and the declaration on July 3, 1996 of Gordon A. Nagle (the Nagle declaration) concerning activity by appellant in connection with the construction and use of bridges over the Conewago Creek in York County, Pennsylvania (the Conewago Creek bridge) and the Schuylkill River in Montgomery County, Pennsylvania (the Schuylkill River bridge).

The Standing Rejections

¹In the event of further prosecution, the examiner may wish to consider whether claims such as claim 10 (which does not require the bridge diaphragm thereof to be "precast") and claim 16 (which does not require the utilization of a "precast" diaphragm in the practice of the method thereof) patentably distinguish over conventional cast-in-place bridge diaphragms and their use in the construction of bridges.

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The following rejections are before us for review:²

(1) claims 20-27, rejected under 35 U.S.C. § 112, second paragraph, as being indefinite;

(2) claims 1-5, 8-14, 16-22 and 25-27, rejected under 35 U.S.C. § 102(b), as being in public use and/or on sale in this country more than one year prior to the filing date of the present application, as evidenced by the activity involved in the construction and use of the Conewago Creek bridge;

(3) claims 1-14 and 16-27, rejected under 35 U.S.C. § 102(b), as being in public use and/or on sale in this country more than one year prior to the filing date of the present application, as evidenced by the activity involved in the construction and use of the Schuylkill bridge;

(4) claim 15, rejected under 35 U.S.C. § 103(a), as being

²The examiner appears to have inadvertently failed to include the 35 U.S.C. § 112, second paragraph, rejection of claims 20-27 made in the final rejection in the statement of the rejections in the answer. However, it is clear from the record as a whole (see, for example, pages 5-7 of the answer and pages 5-7 of the brief) that both the examiner and appellant regard this rejection as being maintained on appeal. Accordingly, the examiner's inadvertent failure to list this rejection in the answer is considered to be harmless.

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unpatentable over the activity involved in the construction
and use of the Conewago Creek bridge;

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(5) claim 15, rejected under 35 U.S.C. § 103(a), as being unpatentable over the activity involved in the construction and use of the Schuylkill bridge.

Claim Grouping

For rejection (1), claim 27 is argued apart from claims 20-26. See page 5 of appellant's brief³ and the "ARGUMENT" section of the brief, under appellant's Issue 1. As to rejections (2) and (3) (appellant's Issues 2 and 3), the arguments in the brief and reply brief are not directed with any reasonable degree of specificity toward any particular claim. Therefore, the claims grouped in these rejections will stand or fall together in accordance with the success or failure of the aforementioned arguments. See 37 CFR § 1.192(c)(7); *In re Schrader*, 22 F.3d 290, 292 n.3, 30 USPQ2d 1455, 1456 n.3 (Fed. Cir. 1994); *In re Nielson*, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987); *In re Hellsund*, 474 F.2d 1307, 1309-10, 177 USPQ 170, 172 (CCPA 1973).

³All references to appellant's brief in this decision are to the amended brief submitted April 21, 1997 (Paper No. 18).

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Rejection (1)

In rejecting claims 20-27 under 35 U.S.C. § 112, second paragraph, as being indefinite, the examiner considers that it is unclear whether these claims are method claims or apparatus claims. In particular, the examiner contends that it is unclear whether claims 20-26 include the method steps of claim 11 and whether claim 27 includes the method steps of claim 16.

Claim 20 is directed to an *apparatus* for practicing the method of claim 11. The body of claim 20 informs the reader that the claimed apparatus comprises a precast concrete bridge-diaphragm having an end pocket for receiving concrete or grout in the step of casting. Claim 27 is similar in the sense that it is directed to an *apparatus* for practicing the method of claim 16, the claimed apparatus having certain structural properties spelled out in the body of the claim.

From our perspective, one of ordinary skill would have no trouble in determining that these claims are directed to an *apparatus per se*. The reference in the preamble of claims 20 and 27 to the methods of claims 11 and 16, respectively, is merely a short-hand way of claim drafting to avoid rewriting

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the particulars of claims 11 and 16 in claims 20 and 27. See *Ex parte Porter*, 25 USPQ2d 1144, 1147 (Bd. Pat. App. & Int. 1992) and *Manual of Patent Examining Procedure* (MPEP) (7th ed., July 1998) § 2173.05(f). It is clear, however, that these preamble recitations impart structural limitations to the claimed apparatus *only* to the extent specific structure is required in order to render the claimed apparatus capable of functioning in the manner called for in the preambles.

In light of the above, the rejection of claims 20-27 under 35 U.S.C. § 112, second paragraph, shall not be sustained.

Rejections (2) and (3)

I.

As noted above, the examiner's rejections of claims 1-5, 8-14, 16-22 and 25-27 (rejection (2)) and claims 1-14 and 16-27 (rejection (3)) under 35 U.S.C. § 102(b) are predicated on information found in the above noted declaration to Bonstedt and the above noted declaration to Nagle.

The Bonstedt declaration indicates that in the period leading up to the construction of the Conewago Creek and

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Schuylkill River bridges, PennDoT (the Pennsylvania Department of Transportation) had in place a policy entitled "Contractor Alternative Design" (CAD) that allowed a contractor to redesign, at his expense, a structure and use that design as the basis for his bid, provided that the contractor's proposed design did not conflict with design standards already set in place by PennDoT

(B6).⁴ The Conewago Creek bridge was bid using this policy (B9). Appellant's inventive precast diaphragms were submitted as part of the winning bid and were accepted by PennDoT as not being in violation of its design standards (B10). The Conewago Creek bridge was placed in service in 1985 (B12). A "revised version" of appellant's invention was submitted as part of a CAD in the winning bid for the Schuylkill River bridge (B13). The Schuylkill River bridge was placed in service in 1988 (B15).

⁴Throughout this decision, we will make reference to paragraphs in the Bonstedt and Nagle declarations by the first letter of declarant's surname followed by the number of the paragraph. Thus, B3 denotes paragraph 3 of the Bonstedt declaration and N2 denotes paragraph 2 of the Nagle declaration.

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The Nagle declaration confirms that the invention of the present application has been installed in the Conewago Creek and Schuylkill River bridges (N6). Appellant was paid a fee for the precast concrete bridge-diaphragms installed in the Conewago Creek and Schuylkill River bridges, although a profit was not realized (N12, N19).

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Based on the above, the examiner reasonably concluded that the evidence was sufficient to meet the PTO's initial burden of going forward by establishing a *prima facie* case that the claimed invention was in public use and/or on sale in this country more than one year prior to the filing date of the present application. See *In re Caveney*, 761 F.2d 671, 674-75, 226 USPQ 1, 3 (Fed. Cir. 1985)(when the issue of "public use" or "on sale" is raised with respect to a claimed invention in a patent application, the burden on the PTO is only one of a preponderance of the evidence).

II.

Appellant argues that the foregoing activity did not constitute a "public use" or "on sale" bar under 35 U.S.C. § 102(b) "because the Conewago Creek bridge represents an experimental use or sale of the invention . . . and one stage in a continuing evaluation thereof" (brief, page 7). In this regard, appellant considers that "the evidentiary record formed by these two declarations shows that the Conewago Creek bridge was an experimental use and sale of the invention and a part of an evaluation of an invention" (brief, page 8).

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Appellant contends (brief, page 9) that because of the nature of the invention, a secret use was not possible. Among the factors urged by appellant on pages 10 and 11 of the brief as excusing the Conewago Creek bridge activity are that (1) the test "will not be completed for at least another 64 years," (2) "[i]t was necessary to test the invention in a practical setting, in order to subject the invention to the variable loading of rolling trucks, weather conditions, etc," (3) "[t]he Conewago Creek installation was one of only a small number of installations; only two bridges have been equipped with the invention," (4) "[t]he Conewago Creek installation was in the nature of a joint venture" involving appellant, the bridge contractors and PennDOT, (5) "[a] fee was accepted only to the extent of covering materials (plus overhead, transportation, and installation)," and (6) "[m]arketing activities have not occurred." Similar arguments are made with respect to the Schuylkill River bridge activity.

III.

Issues arising under the "public use" or "on sale" bar provisions of 35 U.S.C. § 102(b) must be analyzed in light of

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the totality of the circumstances. *In re Brigance*, 792 F.2d 1103, 1107-08, 229 USPQ 988, 991 (Fed. Cir. 1986). Factors to be considered include:

the length of the test period; whether any payment was made for the invention; whether there is any secrecy obligation on the part of the user; whether progress records were kept; whether persons other than the inventor conducted the asserted experiments; how many tests were conducted; and how long the test period was in relation to test periods of similar devices. This list of factors is by no means all inclusive, but merely serves as a basis for objective analysis under section 102(b).

In re Brigance, 792 F.2d at 1108, 229 USPQ at 991 (footnotes omitted).

In the present case, the date of the application is May 8, 1995. Therefore, the critical date one year prior to the date of the application is May 8, 1994. The Bonstedt and Nagle declarations relied upon by the examiner clearly establish that the Conewago Creek and Schuylkill River bridge projects involved the subject matter of claims 1-14 and 16-27 (B10, B13, N11, N15, N18). Further, these declarations clearly establish that the Conewago Creek and Schuylkill River bridge projects involved a sale of the claimed subject matter some 9 and 6 years, respectively, prior to the critical date

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(B12, B15, N12, N19). In addition, the declarations show that the claimed subject matter was used by the public long before the critical date, although the general public may not have been aware of this fact because of the nature of the invention (B12, B15). The above is clearly supported by objective evidence in the record, and has not been disputed by appellant. While we appreciate that durability in an outside environment is inherent in the nature of the present invention and that, accordingly, a certain amount of "real world" testing may have been required, appellant has not, in our view, shown that the examiner erred in finding that the claimed invention is barred by 35 U.S.C. § 102(b). In particular, appellant's contention that the Conewago Creek "test" will not be completed for at least another 64 years (N13; brief, page 10) and that the Schuylkill River "test" will not be completed for at least another 67 years (N20; brief, page 15), and the inference to be drawn therefrom that such ongoing activities would constitute an experimental use negating application of the public use or on sale bar of § 102(b) for the duration of said "test," is simply

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unreasonable.

We are willing to accept that, at least initially, appellant's precritical date activity may have involved an element of experimentation. However, on the record before us, there is ample evidence from which to conclude that there came a time well before the critical date when appellant's activities ceased to be for the purpose of experimentation, and instead shifted to developing a market for the invention. In this regard, it is notable that appellant's diaphragms did not conflict in any way with PennDOT's well established bridge design standards, notwithstanding that they were precast. See B6 (CADs may be used *as long as they do not conflict with the design standards established by PennDOT*), B9 (the Conewago Creek bridge was bid using CAD) and B10 (the precast design was included as part of the winning bid *and accepted by PennDOT*). Accordingly, PennDOT's willingness to accept appellant's precast diaphragm design is an early indication that the ability of appellant's invention to function, from an engineering point of view, in the same manner as conventional bridge diaphragms was not in doubt. Also notable is the lack

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of any indication in the record that appellant's precast diaphragms were treated any differently than conventional bridge diaphragms subsequent to their installation. Instead, it appears that appellant's precast diaphragms were subject only to the same routine inspections by third party bridge inspection companies that conventional bridge diaphragms were subject to (N13). While PennDoT may have had some early concerns regarding appellant's precast diaphragms, these concerns were directed to serviceability and maintenance rather than to the ability of said diaphragms to function as intended.⁵ In any event, we are informed that at least as early as September 28, 1993, some 7 months prior to the critical date of May 8, 1994, PennDoT "did not indicate any concerns about the performance of the precast diaphragms in the field" (B17) and that appellant was so informed.

The PennDoT's "Strike-Off Letter" of February 22, 1989 appears to be the result of regulation and control of bridge construction becoming in general progressively greater, rather

⁵See the PennDoT letter of February 22, 1989 from Chief Engineer William Moyer to PennDoT district engineers, attached as an exhibit to the Bonstedt declaration.

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than because of any particular concern with the performance of appellant's precast diaphragms (N21). The record makes clear that thereafter the thrust of appellant's "test" activity was to develop a design standard that was acceptable to PennDOT and in concurrence with Federal Highway Administration standards so that appellant's precast diaphragms could be freely substituted for conventional diaphragms without resorting to CAD procedures. See N23 ("I expect this review process to end with issuance of a PennDOT standard for use of precast concrete diaphragms in bridge construction"), N25 (" . . . I have no current plans to do so [i.e., place the invention in states other than Pennsylvania], until the invention has been accepted in the form of a PennDOT standard,") and the PennDOT letter of June 2, 1994 from Director of Design Fred W. Bowser to Nagle, attached as an exhibit to the Bonstedt declaration. In our view, the real goal of this sort of "testing" was to gain a competitive market advantage for appellant's precast diaphragm. In any event, the exhibits attached to the Bonstedt declaration documenting the "test" activity referred to in B17 through B25

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and N22 through N24 make clear that the tests in question were for the purpose of investigating the effect that misalignment of prestress clamping forces would have on the connected beams.⁶ In that misalignment and prestress clamping are *unclaimed* features of appellant's invention, the experimental use justification for avoiding a statutory bar does not apply to these experiments. See *RCA Corp. v. Data Gen. Corp.*, 887 F.2d 1056, 1061-62, 12 USPQ2d 1449, 1454 (Fed. Cir. 1989); *In re Smith*, 714 F.2d 1127, 1135-36, 218 USPQ 976, 984 (Fed. Cir. 1983); and *In re Theis*, 610 F.2d 786, 793, 204 USPQ 188, 193-94 (CCPA 1979).

We do not find any objective evidence in the record to support the statement in N10 and N17 that a "joint venture," either formal or informal, existed between appellant's company, the bridge contractors, and PennDoT regarding development and evaluation of the *claimed* invention. For this reason, it is not seen how the supervision and control

⁶See, for example, the letter dated November 8, 1993 from inventor Nagle to Horst Wels of PennDoT, attached as an exhibit to the Bonstedt declaration.

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exercised by PennDoT over the precast diaphragms incorporated in the Conewago Creek and Schuylkill River bridges inured to the benefit of appellant. Moreover, it does not appear, based on the record, that PennDoT was under any formal obligation to report inspection information regarding the precast diaphragms to appellant, or that they in fact ever reported, on a *regular basis*, any such inspection information to appellant. At best, it appears that there may have been an informal agreement between PennDoT and appellant to the effect that appellant would be informed of "any significant developments" learned in inspections (N13, N20). However, it is unclear from the record exactly what appellant would have considered "a significant development" that was worthy of being drawn to his attention, or whether PennDoT was informed of what "developments" they were expected to report. For these reasons, we consider that the amount of control appellant maintained over the precast diaphragms installed in the Conewago Creek and Schuylkill River bridge projects was, at most, minimal. While the amount of control retained by an inventor over the precritical date activity is not the

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"lodestar" test in all cases involving experimental use, it is nevertheless an important indicator of experimental use. *In re Hamilton*, 882 F.2d 1576, 1581, 11 USPQ2d 1890, 1894 (Fed. Cir. 1989).

The record also does not inform us whether appellant had any specific plan in mind for determining when and under what circumstances the invention would be considered a "success," or whether any written records were kept that detailed what progress, if any, was being made to achieve appellant's plan. The amount of record keeping is another indicator of experimental use. *Lough v. Brunswick Corp.*, 86 F.3d 1113, 1120-21, 39 USPQ2d 1100, 1105-06 (Fed. Cir. 1996). Likewise left unclear is whether the unnamed third party contractor charged by PennDoT with periodically inspecting the Conewago Creek and Schuylkill River bridges even knew that testing was occurring. This is another factor to be considered in weighing the evidence. *C.R. Bard, Inc. v. M3 Sys., Inc.* 157 F.3d 1340, 1380, 48 USPQ2d 1225, 1255 (Fed. Cir. 1998). Further, the fact that appellant may not have realized a profit from the sale of the claimed invention (N12, N19) is

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not determinative. *United States Env'tl. Prods. Inc., v. Westall*, 911 F.2d 713, 717, 15 USPQ2d 1898, 1902 (Fed. Cir. 1990).

Upon analysis of the totality of the circumstances, we conclude from the combination of factors discussed above that the invention of claims 1-14 and 16-27 was in public use and on sale in this country prior to the critical date and that appellant did not exercise sufficient control over the claimed device during this period to negate this public use and sale. Accordingly, we shall sustain the standing rejection of claims 1-5, 8-14, 16-22 and 25-27 based on the activity involved in the construction and use of the Conewago Creek bridge, and the standing rejection of claims 1-14 and 16-27 based on the activity involved in the construction and use of the Schuylkill River bridge.

Rejections (4) and (5)

In rejecting claim 15 under 35 U.S.C. § 103, the examiner concedes that the subject matter in public use and/or on sale does not include the pliable material between the diaphragm and I-beam flange as called for in the claim. The examiner

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takes the position, however, that it would have been obvious to one of ordinary skill in the art to include such a material in order to dampen vibrations and/or to prevent water, salt and other corrosive materials from coming between the diaphragm and the I-beam (answer, page 5).

A rejection based on § 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art. *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), quoted in *In re GPAC, Inc.*, 57 F.3d 1573, 1582, 35 USPQ2d 1116, 1123 (Fed. Cir. 1995). In the present case, there is no evidence to support the examiner's position that it would have been obvious to provide a pliable material in the subject matter in public use and/or on sale at the specific location called for in the claim. Rather, the examiner's statement of obviousness appears to be based on impermissible hindsight gleaned from appellant's own disclosure, rather than from the applied prior art. Under these circumstances, the standing § 103 rejections of claim 15 are not sustainable.

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Summary

The rejection of claims 20-27 under the second paragraph of 35 U.S.C. § 112 (rejection (1)) is reversed.

The § 102(b) rejection of claims 1-5, 8-14, 16-22 and 25-27 based on activity involved in the construction and use of the Conewago Creek bridge (rejection (2)), and the § 102(b) rejection of claims 1-14 and 16-27 based on activity involved in the construction and use of the Schuylkill River bridge (rejection (3)) are affirmed.

The § 103(a) rejections of claim 15 (rejections (4) and (5)) are reversed.

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The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

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NEAL E. ABRAMS)	
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