

Paper No. ____
Filed: October 21, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ORACLE CORPORATION
Petitioner

v.

DR. JOSEPH L. DE BELLIS
Patent Owner

Case IPR2024-00221
Patent No. 6,760,720

PATENT OWNER RESPONSE

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	DESCRIPTION OF THE '720 PATENT	2
A.	The '720 Patent Disclosure	2
B.	The Challenged Claims	4
III.	ASSERTED REFERENCES	5
A.	EX1005: <i>Cochran</i>	6
B.	EX1006: <i>HyperSQL</i>	7
C.	EX1007: <i>Zellweger</i>	10
IV.	CLAIM CONSTRUCTION	12
A.	“determining a database schema for a database”	13
B.	and “providing a list of the database fields”	14
C.	“determining a number of entries in the selected database field”	14
D.	“if the [determined] quantity exceed a specified amount, truncating data”	14
E.	“wherein the truncation reduces characters in one or more entries and the truncated data represents each of the entries in the selected database field”	14
V.	ZELLWEGER DOES NOT QUALIFY AS PRIOR ART	15
A.	The Controlling Priority Date of the '720 Patent Is at Least as Early as January 1999	18
B.	Petitioner Applies the <i>Zellweger</i> Patent, Which Has a Filing date of July 15, 1999, and Thus Is Not Prior Art to Patent Owner's January 1999 Priority Date	21
VI.	RESPONSE TO GROUND I	22
A.	<i>Cochran</i> in view of <i>Zellweger</i> Does Not Teach Or Suggest All Limitations of the Claimed Inventions	22
1.	Claim 1	22
2.	Claim 3	23
3.	Claim 6	24

VII. RESPONSE TO GROUND II 25

**A. *HyperSQL* in View of *Zellweger* Does Not Teach or Suggest All the
 Limitations of the Claimed Inventions.....25**

1. Claim 1 25

2. Claim 3 25

VIII. CONCLUSION 25

TABLE OF AUTHORITIES

Cases

<i>Hyatt v. Boone</i> , 146 F.3d 1348, 1352 (Fed. Cir. 1998)	17
<i>In re Jolley</i> , 308 F.3d 1317, 1328 (Fed. Cir. 2002)	16, 17
<i>In re Verhoef</i> , Ca. No. 2017-1976 at *6 (Fed. Cir., May 3, 2018).	17
<i>NFC Tech., LLC v. Matal</i> , 871 F.3d 1367, 1371 (Fed. Cir. 2017)	16, 17
<i>Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.</i> , 841 F.3d 1004, 1009 (Fed. Cir. 2016).	18
<i>Price v. Symsek</i> , 988 F.2d 1187, 1190 (Fed. Cir. 1993)	16, 17
<i>Purdue Pharma. L.P. v. Boehringer Ingelheim GmbH</i> , 237 F.3d 1359, 1365 (Fed. Cir. 2001).	16

Statutes

35 U.S.C. 102.....	15, 16
--------------------	--------

LIST OF EXHIBITS

2001	First Declaration of Dr. Joseph L. De Bellis, MD
2002	Declaration of Lucille Marie De Bellis
2003	Second Declaration of Dr. Joseph L. De Bellis, MD
2004	Curriculum Vitae of Dr. Joseph L. De Bellis, MD
2005	Warehouse.com Receipt (Dec. 10, 1999)
2006	Tallgrass Technologies Receipt (Dec. 15, 1999)
2007	Fig. 10 from U.S. Patent No. 6,760,720
2008	December 1999 Letter re Dorsey & Whitney, LLP

I. INTRODUCTION

Petitioner challenges the patentability of Claims 1-7, 15 – 20, and 27 - 30 of the ‘720 *Patent* based solely on obviousness grounds. Petitioner cannot meet its burden of showing that any of the claims are unpatentable over the asserted combinations for several basic reasons:

- *Zellweger*, U.S. Patent 6,433,797 (EX1007), does not qualify as prior art. The *Zellweger* filing date is July 15, 1999. This July 15, 1999 filing date is subsequent to Patent Owner’s dates of conception (January 1999) and beginning reduction to practice (May 1999). *See* Part V, *infra*.
- *Zellweger* does not teach or suggest what the Petitioner asserts. *See* Part V.B, *infra*.
- *Zellweger* (EX1007) cannot be combined with *Cochran* (EX1005). *See* Part VI.A, *infra*.
- *Zellweger* (EX1007) cannot be combined with *HyperSQL* (EX1006). *See* Part VII.A, *infra*.

Petitioner’s challenges should therefore be rejected.

II. DESCRIPTION OF THE '720 PATENT

A. The '720 Patent Disclosure

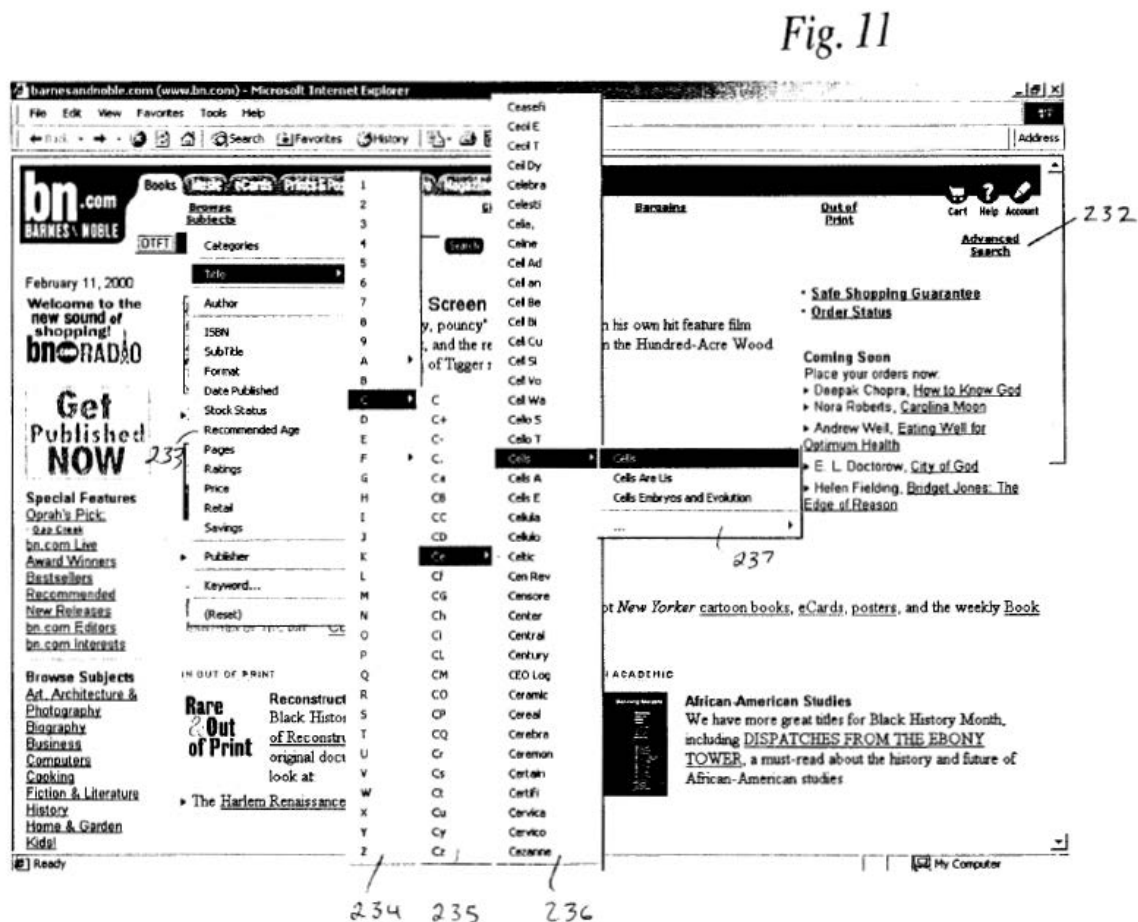
The '720 *Patent* (EX1001) discloses a dynamic (“search-on-the-fly”) search engine (EX1001, 3:55-59) and corresponding dynamic search methods. *Id.*, 3:62-4:8; 5:29-42. The search engine may be applied to databases for which prior knowledge of database schemas is not available to the user. Thus, the search engine determines the database schema. *Id.*, 6:32-33; 7:3-5.

In response to a query, the search engine returns search results, which may be in a tabular form that consists of a column with multiple rows. *Id.*, Figure 4. Each search result may be termed an “entry” in the column. *Id.*, 7:19-33. Entries are not limited to text; an entry may consist of a number of characters (for example, numbers, numerals, symbols, spaces and icons). *Id.*, Fig. 30; 17:14-15.

The search engine may return so many entries that the search results cannot be displayed within the limited space of a display screen or on a single page. The search engine may therefore perform operations on the returned search results. One such operation involves truncation. One example of truncation involves determining a number of characters in each entry in a database field, and if, for a specific entry, the number of characters exceeds a specified limit, deleting a character from the entry. The process of determining and deleting executes in an iterative fashion until

all entries may be represented on the display screen or page. *Id.*, 7:19-16:40; Figures 4 and 10–16.

Figure 11 from the '720 *Patent*, reproduced below, shows truncation by determining a number of characters in each entry in a database field.



As can be seen, reference number 233 is a list of database fields. The list of available data fields 233 shows categories by which a search for books may be narrowed. One available data field is “Titles,” which, as can be seen, was selected by the user. A

search for books by title produces so many results (list 234) that the titles are truncated so that only the first character (1 – 9 and A – Z) of the title is displayed. Note that the titles result list 234 does not include a zero (0), which means that the Barnes & Noble database, at the time of the search, had no books whose title began with the numeral 0. By contrast, the presence of “Z” in the titles result list indicates that the Barnes & Noble database may contain a book whose title begins with “Zero.” This first interim result list is generated by successive, or iterative truncation. *See* EX1001, 8:22– 9:6.

B. The Challenged Claims

Claims 1 – 7, 15 – 19, and 27 - 30, are challenged.

Claim 1, directed to a computer-implemented method for searching databases, recites limitations not taught or suggested by any combination of references asserted by Petitioner, including (1) providing a list of database fields, wherein the list includes a descriptor indicating a data category; (2) receiving a search selection for a database field on the provided list of the database fields; (3) determining a quantity of entries in the selected database field; (4) if the quantity exceed a specified amount, truncating data and displaying the truncated data wherein the truncating reduces characters in one or more entries in the selected database field and the truncated data represents each of the entries in the selected database field; and if the quantity does

not exceed the specified amount, displaying contents of the database field. EX1001, claim 1.

Independent claim 3, directed to a method implemented on a computer for searching a database, similarly recites limitations not taught or suggested in any combination of references asserted by Petitioner, including (1) generating a list of data fields; (2) receiving a first data field selection from the list of data fields; (3) determining a first quantity indicative of a number of entries of the selected data field; (4) if the first quantity exceeds a specified limit, reducing a size of data to be displayed from the selected data field wherein the reducing reduces characters in the selected data field; and (5) displaying data from the selected data field. *Id.*, claim 3.

In addition, dependent claims 2 - 7, 15 – 19, and 27 - 30 also recite limitations not taught or suggested by any combination of references asserted by Petitioner. For example, claim 6 recites “[t]he method of claim 3, wherein the data are displayed on a terminal, and wherein the specified limit is determined dynamically, based on a characteristic of the terminal.” *Id.*, claim 6.

III. ASSERTED REFERENCES

As a general matter, Petitioner has described the references asserted in the present IPR while ignoring sections of the disclosures that teach away from the subject matter of the challenged claims. These sections, once reviewed by a

PHOSITA, would have made clear that a PHOSITA would have had no motivation to combine any of the references. The sections of this Patent Owner's Response that follow immediately hereafter describe the defects in each reference.

A. EX1005: *Cochran*

Cochran is directed to a system and a method for managing the presentation of search terms on a computer terminal. that allow an end user 8 access to a database “without having to understand the physical database schema.” EX1005, Abstract. To this end, *Cochran* discloses that it “is a particular object of the invention to enable a user to view different lists of choices or search terms, that are available in a unique situation.” *Id.*, 4:20-22. However, *Cochran* explicitly discloses that its “search system ... is used to acquire travel information ... [from a] database, known by its trade name ‘TRAVEL SEARCH’TM ... [which] consists of database records of more than 13,000 hotels, resorts and inn in the United States.” *Id.*, 6:58-64. *Cochran* goes on to explain that a user accesses the TRAVEL SEARCHTM database using a series of predefined search templates, list identifiers, pull-down menus, and pick boxes. *See, generally, id.*, 7:9 – 8: 68; Figs. 3a – 4d. In other words, *Cochran* provides a fixed database accessible through fixed search menus. *Cochran* certainly does not provide a dynamic, or search-on-the-fly, search system, and *Cochran*'s search system does not determine a database schema, or a list of data fields coincident with execution of a search; rather, in *Cochran*, the schema is pre-defined as are the

various tables and list identifiers being searched as well as the various available filters and available search terms. *See*, for example, *id.*, 10:66 – 11:8 (“Here there are five search terms 211 to choose from: January-March, April-June, July-September, October-December and Disregard Start of Travel.”). Furthermore, Petitioner’s expert admits the deficiencies in *Cochran*. In paragraph 179 of his Declaration, Dr. Zadok states “Cochran discloses that it ‘display[s] a list of all available choices’ to ‘inform the user of available options before any search is initiated.’” Thus, Petitioner’s expert admits that *Cochran* uses a preconfigured menu system and thus is capable only of a static search. In paragraph 184, Dr. Zadok describes static indications such as Location, Lodging Type, Lodging Name, etc. In paragraph 185, Dr. Zadok describes *Cochran*’s “pick boxes.” These pick boxes are preconfigured and only allow a static view of *Cochran*’s Travel Search database.

As a further example, *Cochran* preconfigures terms such as start of travel, search regions (e.g., Atlantic States), and Lodging Type, just to name a few. Thus a user is constrained to search using only preconfigured “list identifiers.”

B. EX1006: *HyperSQL*

Just as with *Cochran*, *HyperSQL* describes a preconfigured database search menu. In the case of *HyperSQL*, the database being searched related to biologic subject matter. As can be seen comparing *HyperSQL* Figures 2 (Bacterium) and 5 (Algae), the selection of a particular genus changes the preconfigured search

interface to one designed for the specific biologic matter. Thus, *HyperSQL* is little different from *Cochran* in that all search queries, menus, and choices are preconfigured and are known in advance of a search query. Accordingly, *HypeSQL* suffers from all the infirmities that afflict *Cochran*.

More specifically, *HyperSQL* uses an interoperability layer that allows a database administrator to rapidly construct browser-based queries for searching remote databases. *HyperSQL* can be used to create forms and hyper-text based database interfaces. However, these interfaces are static templates for searching a database, and are not capable of dynamic search. A query menu serves as a starting point for users, presenting introductory information about the database and displaying a list of queries organized by subject. Selecting a specific query brings up a query form. The query form is specific to the database and is preconfigured.

Furthermore, each field has a drop-down menu that has relevant values populated from the database. The presence of wild cards makes it clear that all the fields indicates that all the preselected fields or dimensions offered must have values present to run the query. The result is a list of relevant Query links that when selected take the user to more specific information.

In one example, the form is created with drop down menus that are auto populated by the database. This query-by-example (QBE) permits dynamic composing of SQL code based on the user's selection, a technique that a PHOSITA

would recognize as well established since the 1970s. However, because all the constraints are compiled and requested from the database at once, there is the possibility of errors that *HyperSQL* addresses with a debugging feature. “The core of the *HyperSQL* software is the *HyperSQL gateway*, comprised of an interpreter and a communications back end.” “Each database transaction (submitting a query form or clicking on a querylink) invokes a new copy of the gateway, which terminates automatically after processing the query results.”

As Dr. Zadok points out, “Figure 2, annotated above, shows that the querylist for “Genus” contains several values that a user can choose from including “Agrobacterium,” “Bacillus,” “Clavibacter,” “Escherichia,” “Pseudomonas,” and other values that are obscured and accessible using the scroll bar or buttons on the right side of the querylist. *HyperSQL* had received a search selection for the database field “Genus” where the “allowed” values from the database start with “Agrobacterium.” If *HyperSQL* had *not* received such a search selection, *HyperSQL* would be unable to retrieve the values from the database to populate the list of values in Genus.

The taxonomy of all living things breaks down into seven nested (hierarchal) classifications: Kingdom>Phylum>Class>Order>Family>Genus>Species. The standard binomial classification of Bacteria uses Genus and Species. There are tens of thousands of Species of Bacteria. They are further classified based on their

reaction to Gram staining (Gram-positive or Gram-negative), their shape (cocci, bacilli, or spirilla), their oxygen requirements (aerobic, anaerobic, or facultative) and more recently by their genetic makeup (there are currently over 1000 species of bacteria that have had their gene sequencing mapped).

HyperSQL represents a very limited and rudimentary attempt at classifying bacteria and its practical limitations distinct from a dynamic search would become apparent. In bacterial taxonomy, different genera can have species with the same species name. This happens because the species name refers to a specific characteristic or description of the bacterium that can be found in more than one genus. As an example, *Streptococcus pyogenes* is a gram-positive cocci. *Arcanobacterium pyogenes* is a gram-positive rod. If the species alone was placed in *HyperSQL* and the ability to “sort” the results by Genus and morphology of the bacteria (cocci versus rod) would be limited

C. EX1007: Zellweger

Zellweger has a filing date of July 15, 1999. As discussed herein, Zellweger, based on this July 15, 1999 filing date is not prior art to the '720 Patent.

Even though it is not prior art, *Zellweger* does not cure the defects in *Cochran* and *HyperSQL* noted above.

Zellweger is directed to a hierarchical menu structure that implements a “tab menu” feature that aims to limit the number of search terms displayed to a user in an

interactive configuration window. EX1007, Abstract. *Zellweger* likens its “tab menu” feature to “a thumbnail tab in a book, its paper counterpart. *Id.*, 2:16-17. Patent Owner notes that such “thumbnail tabs” are a common feature of dictionaries, for example. *Zellweger* describe a process for generating its “tab menu” in which a user “navigates content menu 21 in window 76 to select a menu entry that points to a target list menu.... Each time an entry is highlighted, the number of items in its successor or offspring list is displayed ... [and then the user] selects a radio button in 78 to designate the source for the tab list menu.” *Id.*, 4:11-19; Figure 6a. *Zellweger* does not disclose that this process of converting menu selections in content menu continues until all menu selections are converted to tab menus. However, what is clear from *Zellweger*’s disclosure is a process of converting one static menu (i.e., the “content menu”) into another static menu (“the tab menu”). Thus, *Zellweger*’s “tab menus” are created in advance of any search, the “tab menus” are static, albeit more finely-grained than the original “content menu,” and the “tab menus” are not created dynamically as part of any search or query of a database. Thus, *Zellweger*’s “tab menus” suffer from many of the defects inherent in the original, and static, “content menus,” namely *Zellweger*’s “tab menus” (1) do not and cannot account for changes in the structure and content of the database being searched, and (2) constrain the user to employ static search options (i.e., the “tab menus”).

IV. CLAIM CONSTRUCTION

Petitioner proposes that all claim limitations be given their plain and ordinary meaning.

Patent Owner asserts that several claim terms require construction following the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005): *Phillips* emphasized that the proper construction is the meaning a person skilled in the art would give a term, considering the context of the entire patent. Patent Owner asserts that several claim terms require construction in order to properly determine the outcome of this IPR. More specifically, Patent Owner alleges:

1. A genuine dispute that affects the determination of patentability exists between what Patent Owner and Petitioner allege are the intended meanings of several claim terms. While Petitioner alleges all claim terms should be given their plain and ordinary meaning, Patent Owner, as discussed below, alleges several claim terms must be construed in light of the specification as that specification would have been understood by a POSITA at the time of the invention.
2. Construction of certain claim terms will have a material effect on the patentability decision.
3. Federal Circuit case law emphasizes that claim construction is required when the meaning of a term is material to the patentability analysis.

Independent claims 1 and 3 recite limitations that require construction. The similarity of limitations between the two claims means that construing the following limitations of claim 1 to have the asserted meanings will apply as well to the limitations of claim 3.

A. “determining a database schema for a database”

The ’720 *Patent* discloses a dynamic search engine. That is, the disclosed search engine program is adaptable, on-the-fly, to search any database without the need for the search engine program to be “preconfigured” to match the existing structure of the database to be searched. Thus, as used in the ’720 *Patent* “determining a database schema” allows a computer-implemented dynamic, or “search-on-the-fly” search program to identify database fields that may be searched. The ’720 *Patent* refers to a “database” as a computerized “collection of data.” EX1001, ’720 *Patent*, 1:24–25. While the ’720 *Patent* refers to “schema” in a relational database as “a collection of tables,” other database types would have other structures. Thus, a PHOSITA would have understood “determining a database schema” meant “ascertaining or identifying the logical structure of data stored in computerized files.”

B. and “providing a list of the database fields”

Properly construed, the limitation means the search engine program presents a list of the database fields that were determined at the time the search query was submitted.

C. “determining a number of entries in the selected database field”

Properly construed, this this limitation means that at the time a database search is executed, the search engine program determines how many entries exist in the database field. In other words, the determination is an active step in the search process because the number of entries in a database field may not be fixed, and the search of claim 1 requires the search program know how many entries may be returned by the applied search query.

D. “if the [determined] quantity exceed a specified amount, truncating data”

The '720 *Patent* discloses a truncation process that is invoked to “reduce ... the result list until the result list may be displayed. EX10015:66-67.

Thus truncating data should be construed to mean reducing the amount of data returned as a result of the database search.

E. “wherein the truncation reduces characters in one or more entries and the truncated data represents each of the entries in the selected database field”

The '*720 Patent* discloses methods for reducing a size of an entry, all of which involve truncation in which characters are deleted from an entry. The disclosed truncation methods change an original entry to a reduced-size entry. EX1001 6:61-7:43.

Thus, this limitation should be construed considering the disclosed truncation processes of the '*720 Patent*. The goal of truncation in the '*720 Patent* is to provide the user with a complete representation of the entire content of a selected data field on one page so that the user can recognize entries for further searching and scrolling, and identify any missing entries:

For example, the terminal 14 may be limited to displaying 20 lines of data (entries, records) from the database 12. The truncator 152 will cycle ... until the result list is small enough for the capacity of the terminal 14. EX1001, 7:7–22.

Thus, in the '*720 Patent*, truncation is executed until the result list can be displayed, and each entry returned as a result of the search is represented.

V. *ZELLWEGER* DOES NOT QUALIFY AS PRIOR ART

To qualify as prior art, a patent document must have a priority date prior to the date of invention of the challenged patent. Pre-AIA 35 U.S.C § 102(a). For purposes of determining priority under the pre-AIA statute, which applies here, a

Patent Owner may antedate a reference by showing an earlier date of conception followed by a reduction to practice at a later date, so long as the inventor practiced reasonable diligence in reducing the invention to practice. Pre-AIA 35 U.S.C. § 102(g); *Purdue Pharma. L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001) (citing *Price v. Symsek*, 988 F.2d 1187, 1190 (Fed. Cir. 1993)). Each step of conception, diligence, and reduction to practice is established when supported by corroborating evidence independent from the inventor's testimony. *NFC Tech., LLC v. Matal*, 871 F.3d 1367, 1371 (Fed. Cir. 2017). Corroborating evidence will be evaluated under a "rule of reason." *Price*, 988 F.2d at 1195. All pertinent evidence must be weighed, and no single piece of evidence need establish conception, diligence, or reduction to practice on its own. *Id.* at 1196. "[C]orroboation may be provided by sufficient independent circumstantial evidence, and corroboration of every factual issue contested by the parties is not a requirement of the law." *In re Jolley*, 308 F.3d 1317, 1328 (Fed. Cir. 2002).

Conception occurs when the inventor has a definite and permanent idea of the complete invention in his mind. *In re Verhoef*, Ca. No. 2017-1976 at *6 (Fed. Cir., May 3, 2018). That idea is definite and permanent when the inventor has a specific solution in mind for the problem at hand, not simply a general goal or plan. *Id.* Conception can be corroborated by contemporaneous documents and/or testimony that are tethered to the invention. *See Jolley*, 308 F.3d at 1324-25 (a supervisor's

testimony regarding the company's development of the invention sufficiently corroborated conception); *Price*, 988 F.2d at 1195-96 (board erred in determining that corporate secretary's testimony did not sufficiently corroborate inventor's testimony and exhibits); *NFC Tech.*, 871 F.3d at 1372 (documentary evidence such as a facsimile cover sheet, test document, and highlighted wiring diagram were sufficient to corroborate inventor testimony regarding conception).

A reduction to practice may be either actual or constructive. The invention is presumed to have been reduced to practice no later than the filing date of the application from which the patent issued. *See Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998) ("The filing of a patent application serves as conception and constructive reduction to practice of the subject matter described in the application").

The inventor must continuously work diligently between the critical dates of conception and reduction to practice; however, continuous diligence requires only that a party prove "reasonably continuous diligence." *Id.* at 1009. Thus, periods of inactivity within the critical period do not destroy a claim of reasonable diligence. *Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.*, 841 F.3d 1004, 1009 (Fed. Cir. 2016).

It is the date of Dr. De Bellis' conception that must be considered in determining priority, and when that date is considered, *Zellweger*, U.S. Patent 6,353,433, does not qualify as prior art.

A. The Controlling Priority Date of the '720 Patent Is at Least as Early as January 1999

Dr. De Bellis first conceived of his search-on-the-fly system in the course of developing an improved data management system for his medical practice. EX2002, Declaration of Lucille Marie De Bellis, at ¶¶5-7; EX2001, First Declaration of Dr. Joseph L. De Bellis, at ¶¶20-43. In January 1999, Dr. De Bellis described his concept for his search-on-the-fly system that would allow users to search using criteria of their choice as a starting point and truncate results to allow all results to be returned and displayed. EX2001, at ¶¶45-47. His office manager specifically recalls Dr. De Bellis describing his concepts to her around the time of her birthday in January 1999. EX2002, at ¶5. After that point, she recalls that Dr. De Bellis attempted for several months to adopt commercially-available products to embody his concepts, but those products were unsuitable. EX2002, at ¶6.

Accordingly, beginning in May 1999, Dr. De Bellis began working to develop his own system. EX2001, at ¶48; EX2002, at ¶8-12. The process was frustrating for Dr. De Bellis, who was not a software programmer, and hampered by the fact that the summer months were the busiest time for his practice. EX2001, at ¶49; EX2002, at ¶11.

In August 1999, Dr. De Bellis discussed his concepts and his frustrations regarding developing a system that embodies them with a computer programmer,

Adriano Freire. EX2001, at ¶50; EX2002, at ¶13. By September 1999, Dr. De Bellis hired Mr. Freire full-time for the sole and specific purpose of developing a data management system that embodied the concepts that form the basis of the '720 Patent. EX2002, at ¶13. From there, development activity continued at a brisk pace:

- Beginning in September 1999 and continuing through December 1999, Dr. De Bellis made substantial purchases of software and computer equipment for the express purpose of developing his invention. EX2002, at ¶¶14-17, 20; EX2001, at ¶¶51-53.
- In September 1999, Dr. De Bellis decided to seek patent protection for his inventions and began speaking with attorneys about potential patent filing in October 1999. EX2001, at ¶54; EX2002, at ¶21.
- Also in October 1999, Dr. De Bellis formed a company, Virtual Logistix, Inc., to produce a commercial version of his search-on-the-fly data management system. He hired his office manager to also serve as the company's operations manager. EX2001, at ¶52; EX2002, at ¶18.
- By November 1999, Dr. De Bellis had formally engaged lawyers to prepare his patent applications. He and Mr. Freire had also created a database to be searched using the search-on-the-fly system. EX2001, at ¶54; EX2002, at ¶¶17, 19.

- On December 9, 1999, Dr. De Bellis demonstrated the system embodying his patented search-on-the-fly concepts to his attorneys who visited his medical practice offices in Southampton, NY. EX2001, at ¶¶56-58; EX2002, at ¶¶21-22. Following the visit, Dr. De Bellis copied the search-on-the-fly software onto a CD and sent that CD to his attorneys on December 28, 1999. EX2001, at ¶59; EX2002, at ¶¶23-24. Screenshots from that presentation were used as figures in the '720 Patent. EX2011, at ¶¶24-25; EX2002, at ¶¶22-25.

All the foregoing is corroborated by the documents of record and the testimony of Dr. De Bellis' office manager, Missy De Bellis. Ms. De Bellis has testified that she expressly remembers Dr. De Bellis describing his concepts of a system that incorporates functionality such as "rolling and tumbling" and "truncation" of data to take advantage of the human ability of recognition. EX2002, at ¶¶7-10. Her testimony corroborates Dr. De Bellis' account of those conversations. EX2001, at ¶¶5-11. Ms. De Bellis also testified that she recalls Dr. De Bellis discussing his excitement and frustration as he continued to develop a system embodying his concepts. EX2002, at ¶12.

Ms. De Bellis further testified that: (1) she made the purchases of computer software and equipment for use with the development of the search-on-the-fly system and remembers them because they were out-of-the-ordinary for the medical

practice; (2) she verified the authenticity of the various receipts because she can identify the handwriting; (3) she specifically recalls the hiring of Mr. Freire and interfaced with him directly while he was working on developing the search-on-the-fly system; (4) she was personally involved and recalls engaging the patent attorneys and meeting them during their visit, which she specifically recalls was prior to December 14, 1999; (5) she personally prepared the December 28, 1999 letter forwarding the CD to the patent attorneys; and (6) she recognizes a figure from the parent of the '720 patent as a screenshot of the search-on-the-fly system that was demonstrated at the December 9, 1999 meeting. EX2002, at ¶¶17-27.

Thus, as corroborated by the evidence of record, Dr. De Bellis disclosed the concept of his invention in January 1999, began reducing it to practice in May 1999, began work on a commercial embodiment in September 1999, and had actually reduced his invention to practice before December 9, 1999.

B. Petitioner Applies the *Zellweger* Patent, Which Has a Filing date of July 15, 1999, and Thus Is Not Prior Art to Patent Owner's January 1999 Priority Date

Petitioner relies on *Zellweger* in every claim challenge. Yet *Zellweger* has a filing date that is subsequent to Patent Owner's conception of his invention and subsequent reduction to practice. Petitioner has provided no argument that *Zellweger* in any way predates this date of conception.

The corroborated evidence shows that Patent Owner disclosed his search-on-the-fly technology as described and claimed in the '720 *Patent* in January 1999, and began reduction to practice in May 1999. Patent Owner began development of a commercial embodiment in September 1999 and Patent Owner actually reduced the invention to practice before December 9, 1999.

Accordingly, *Zellweger* does not qualify as prior art to the '720 *Patent* and *Zellweger* cannot be considered in combination with either *Cochran* or *HyperSQL*.

VI. RESPONSE TO GROUND I

A. *Cochran* in view of *Zellweger* Does Not Teach Or Suggest All Limitations of the Claimed Inventions

1. Claim 1

Putting aside the fact that *Zellweger* is not prior art, *Cochran* in view of *Zellweger* does not teach or suggest at least the claim 1 limitations of (1) “determining a database schema for a database,” (2) providing a list of the database fields,” (3) “determining a quantity of entries in the selected database field,” (4) “truncating data ... and the truncated data represents each of the entries in the selected database field.”

Both *Cochran* and *Zellweger* operate by generating static, as opposed to dynamic, search templates for searching a known database having a known database schema. Thus, in both references, there is no search engine or search program that

determines a database schema. Because no search engine determines the database schema, the search engine cannot present a dynamically-determined list of database fields. For example, *Cochran* merely provides a statically-determined series or hierarchy of search menus. *Zellweger* provides a content menu that includes a list of statically-determined categories, such as authors and subjects. *Cochran* in view of *Zellweger* does not disclose or suggest determining a quantity of entries and reducing a number of entries wherein the reduced data represents each of the entries. For example, in non-prior art *Zellweger*, a list of 1,231 Authors is reduced to a vertically-scrollable list of Author last names. However, the Author last names as shown in window 85 of Figure 7 is not in fact, the supposedly ellipses-separated pair of last names. See, for example, “Komisarjevsky” There is no second last name paired with Komisarjevsky. Other second last names of the last name pairs are not completely visible in window 85. More fundamentally, non-prior art *Zellweger* is directed to producing “tabs” by which the entries in an Author list can be represented statically. However configured these “tabs,” based on non-prior art *Zellweger*’s own descriptions, do not represent each of the Author entries.

2. Claim 3

Cochran in view of *Zellweger* does not teach or suggest at least the claim 3 limitations of (1) generating a list of data fields, (2) determining a first quantity

indicative of a number of entries from the selected database field, (3) reducing a size of data to be displayed, wherein ... the size reduced data represents each of the entries in the selected database field.

Application of *Cochran* in view of *Zellweger* to claim 3 would produce the same results as does the application of the combination to claim 1.

3. Claim 6

Dependent claim 6 recites “wherein the data are displayed on a terminal, and wherein the specified limit is determined dynamically, based on a characteristic of the terminal.”

Petitioner’s expert asserts that *Cochran* teaches the above-quoted limitation. EX1003, ¶¶ 240-241. Dr. Zadok states that “As an initial matter, a POSITA would have known that every display or terminal device has specified dimension.” The point of this statement is not clear. However, Patent Owner agrees with this statement.

Dr. Zadok then goes on to allege that *Cochran*’s use of a scroll bar added to a pick list teaches the limitation of claim 6. However, the very need to employ a scroll bar proves that *Cochran* does not determine “the specified limit dynamically.” In claim 6, determining the specified limit dynamically based on a characteristic of the terminal is used to reduce the data displayed so that the data will fit on the terminal.

VII. RESPONSE TO GROUND II

A. *HyperSQL* in View of *Zellweger* Does Not Teach or Suggest All the Limitations of the Claimed Inventions

1. Claim 1

HyperSQL in view of *Zellweger* does not teach or suggest at least the claim 1 limitations of (1) “determining a database schema for a database,” (2) providing a list of the database fields,” (3) “determining a quantity of entries in the selected database field,” (4) “truncating data ... and the truncated data represents each of the entries in the selected database field.”

2. Claim 3

HyperSQL in view of *Zellweger* does not teach or suggest at least the claim 3 limitations of (1) generating a list of data fields, (2) determining a first quantity indicative of a number of entries from the selected database field, (3) reducing a size of data to be displayed, wherein ... the size reduced data represents each of the entries in the selected database field.

VIII. CONCLUSION

For the foregoing reasons, Petitioner's challenges to Claims 1 – 7, 15 – 20, and 27 - 30 of the '720 *Patent* should be rejected.

Respectfully submitted,

Dated: October 21, 2024

/Joseph L. De Bellis/
Dr. Joseph L. De Bellis, MD

Patent Owner

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner hereby certifies that the foregoing brief contains 5,516 words, excluding those portions exempted pursuant to § 42.24(a)-(b).

Dated: October 21, 2024

/Joseph L. De Bellis/
Dr. Joseph L. De Bellis, MD

Patent Owner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on the date indicated below, a complete and entire copy of this submission, including the exhibits hereto, was provided by email to Petitioner's counsel via email, as agreed to by Petitioner's Service Information in the Petition submission, by serving the email address of record.

Respectfully submitted,

Dated: October 21, 2024

/Joseph L. De Bellis/
Dr. Joseph L. De Bellis, MD

Patent Owner