

**UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

**ORACLE CORPORATION,
Petitioner**

v.

**JOSEPH L. DE BELLIS,
Patent Owner**

U.S. Patent No. 6,760,720

Case No. IPR2024-00221

**PETITIONER'S HEARING DEMONSTRATIVES
March 19, 2025**

Overview of the '720 Patent

- Directed to a system and method for “searching databases.”
- Searching performed via “GUI” with “one or more pull down menus.”
- Menus are populated with available “search terms” from the database that user can select. User not required to “know anything about the database structure” to perform search.
- If database includes too many entries for display in menu, entries can be “truncate[d]” before displaying to searching user.

A Sort-on-the-Fly/Search-on-the-Fly search engine (hereafter, search-on-the-fly search engine) provides an intuitive means for searching databases, allowing a user to access data in the database without having to know anything about the database structure. A user selects a desired search

In an embodiment, the search-on-the-fly search engine uses graphical user interfaces (GUIs) and one or more icons to make the search process as efficient as possible. The GUIs may incorporate one or more pull down menus of available search terms. As a user selects an item from a first pulldown

may be displayed. If the entries are too numerous to be displayed within a standard screen size, for example, the search engine 125 may, in an iterative fashion, attempt to reduce, or truncate, the result list until the result list may be displayed. In the example shown in FIG. 4, entries in the city

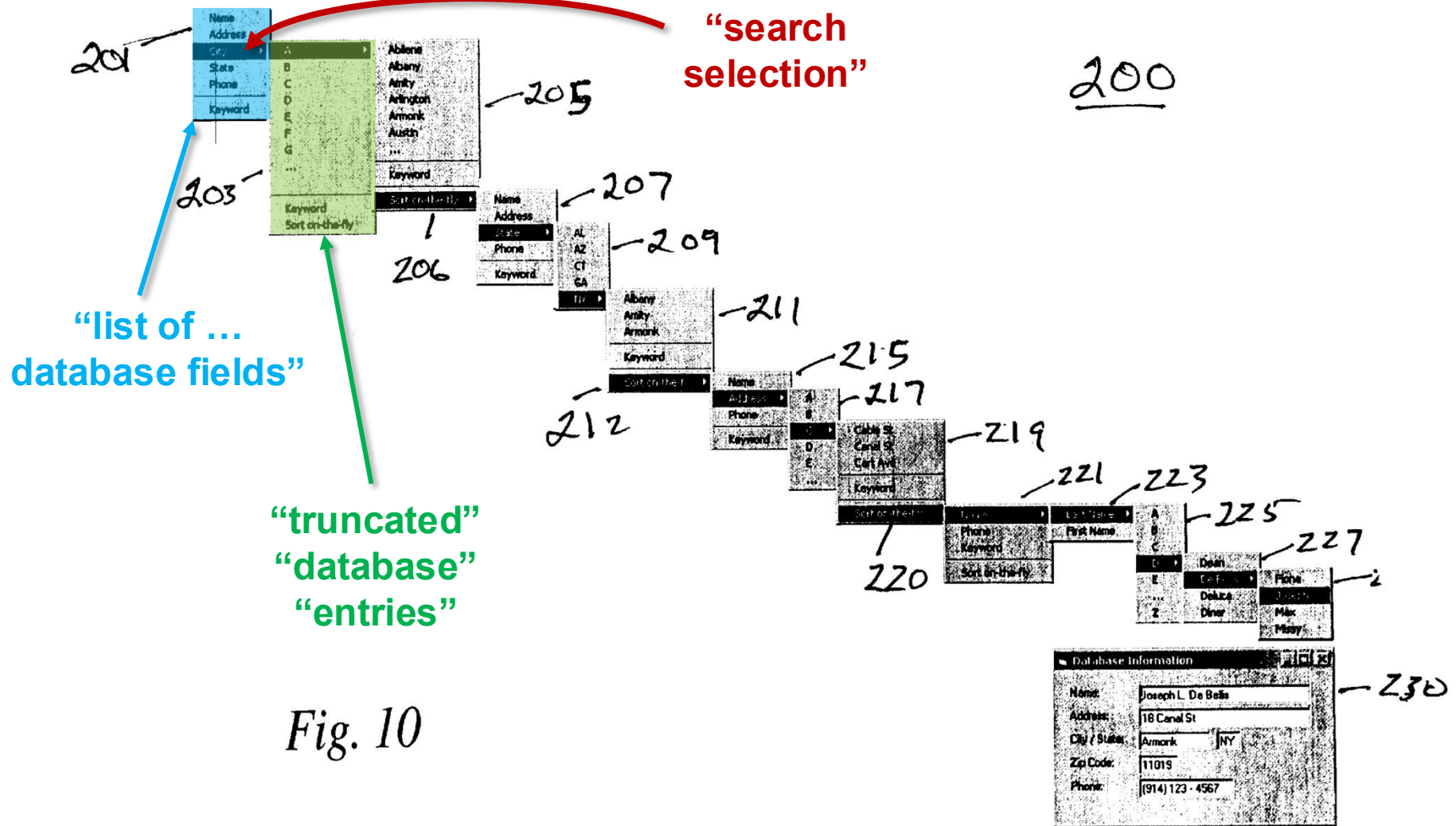
*Ex. 1001, '720 Patent at 2:30-35, 2:55-59, 5:63-67,
(see also Paper 1, Petition at 15)*

The '720 Patent

1. A method implemented on a computer for searching databases, comprising:
 - determining a database schema for a database, wherein the database includes database fields;
 - providing a list of the database fields, wherein the list includes a descriptor indicating a data category;
 - receiving a search selection for a database field on the provided list of the database fields;
 - determining a quantity of entries in the selected database field;
 - 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.

*Ex. 1001, '720 Patent at Claim 1,
(see also Paper 1, Petition at 14-15)*

The '720 Patent



**Ex. 1001, '720 Patent at Fig. 10,
(see also Paper 1, Petition at 2)**

Petition Grounds

Ground	Basis
Ground 1	Claims 1-7, 15-20, 27-30 are obvious over Cochran and Zellweger
Ground 2	Claims 1-6, 7, 15-19, 27-30 are obvious over HyperSQL and Zellweger
Ground 3	Claims 21-23 are obvious over HyperSQL, Zellweger, and Microsoft Access
Ground 4	Claim 25 is obvious over HyperSQL, Zellweger, Microsoft Access, and Janes
Ground 5	Claim 26 is obvious over Cochran, Zellweger, Janes, and Spiegel

Paper 1, Petition at 14

Cochran Overview

- Seeks to improve on existing static database search methods that force users along “single hierarchical” and unchanging search path.
- Provides users with a more “efficient,” “user-friendly,” and adaptable method of searching a database.
- Search GUI presents users with list of database fields.
- Each field includes a pull-down menu identifying selectable database entries in that field.
- The pull-down menus list only entries “available” in the database, and adapt to account for selection “decisions” already made by the user.

arrangements work well. However, decision-making processes having a single hierarchical arrangement of choices do not adequately serve the needs of all users. For instance, in the example above, if the manufacturers’ names and models are not known to the user, or if the price spread is very large, the user may have preferred to start with price.



computer database searches. It is a further object of the invention to provide an efficient and user-friendly method of searching computer databases. It is yet another object of the

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 search situation. The lists may be

The invention takes into account the information that is available in the database and the decisions that have already been made by a particular user during a particular search.

*Ex. 1005, Cochran, 2:46-52, 4:4-6, 4:20-22, 4:45-46
(see also Paper 1, Petition at 17-18; Paper 26, Reply at 18-19)*

Cochran Overview

FIG. 4b

Travel Search Database - Selection Screen

1. Start of Travel: January-March

2. Number of People: Disregard Occupancy 314

3. Location: Within a Region, Atlantic States: DE,DC,MD,PA,NJ,VA,WV

4. Lodging Type: Hotel/Motel 214 Search

5. Lodging Name: Airport Inn 215 Search

6. Amenities: Outdoor Swimming Search 315

7. Price: Economy Search 216

Number Found: 1308 217 317

View All View One Reset 4-7 Start Over Help ...

121 122 123 124

A blue arrow points from the text "list of ... database fields" to the list of fields (1-7) on the left side of the screen.

"list of ...
database fields"

"search
selection"

FIG. 4e

Travel Search Database

1. Start of Travel: ...

2. Number of People: ...

3. Location: ...

4. Lodging Type: ...

5. Lodging Name: ...

6. Amenities: ...

7. Price: ...

Number Found: 1308

View All View One

355

365

A green arrow points from the text "database entries" to the list of search results (Beckley Inn, Belle Meade, etc.) on the right side of the screen.

"database"
"entries"

Ex. 1005, Cochran, Figs. 4b, 4e
(see also Paper 1, Petition at 18)

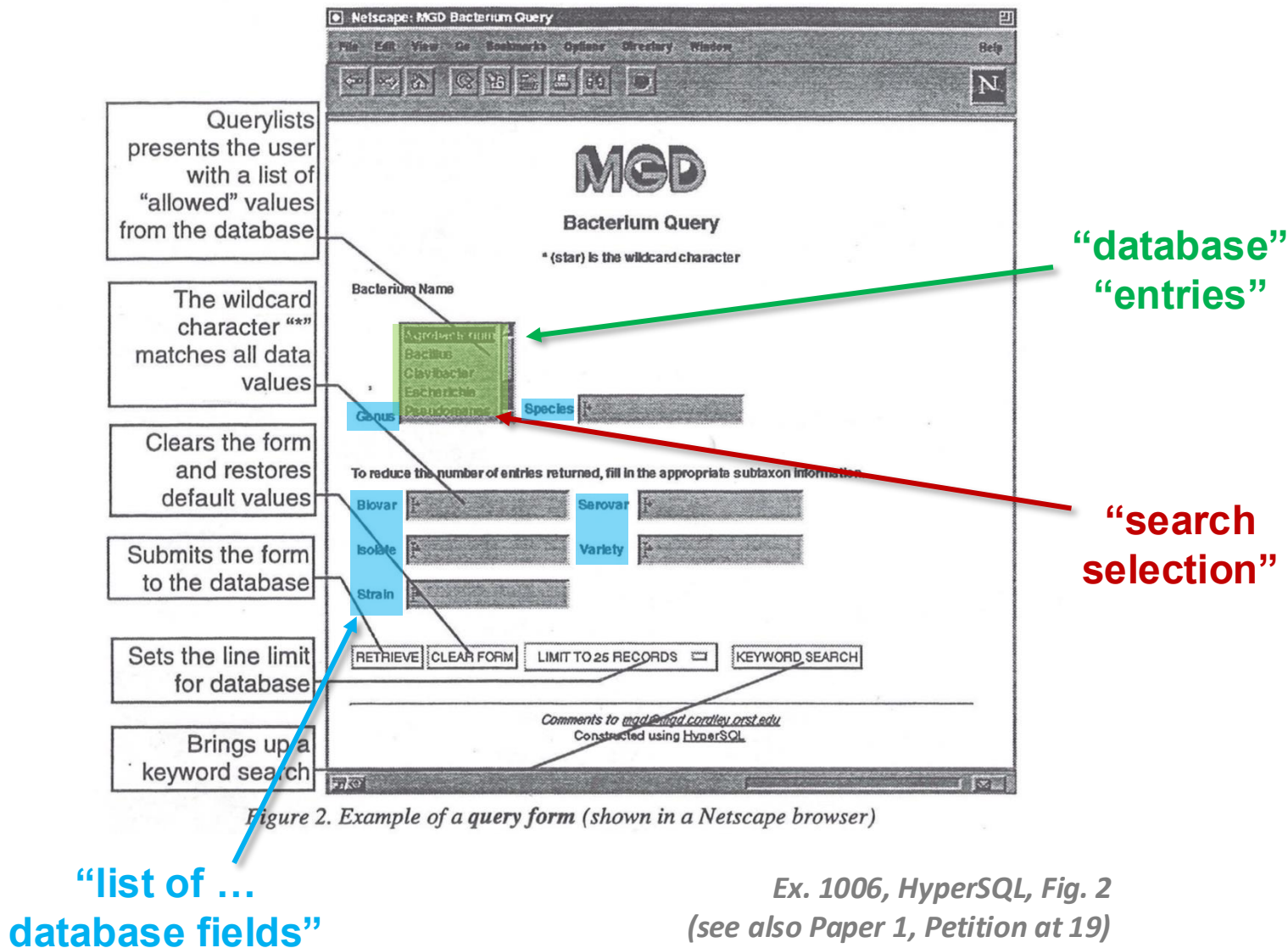
HyperSQL Overview

- Teaches a database search GUI that presents users with list of database fields.
- Each field includes a pull-down menu identifying selectable database entries in that field.
- User are not required to have any pre-existing knowledge about the database before searching.

HyperSQL is an interoperability layer that enables database administrators to rapidly construct browser-based query interfaces to remote Sybase databases. Current browsers (i.e., Netscape, Mosaic, Internet Explorer) do not easily interoperate with databases without extensive "CGI" (Common Gateway Interface) programming. HyperSQL can be used to create forms- and hypertext-based database interfaces for non computer experts (e.g., scientists, business users). Such interfaces permit the user to query databases by filling out query forms selected from menus. No knowledge of SQL is required because the interface automatically composes SQL from user input. Database results are automatically formatted as graphics and hypertext, including clickable links which can issue additional queries for browsing through related data, bring up other Web pages, or access remote search engines.

*Ex. 1006, HyperSQL, p. 329
(see also Paper 1, Petition at 19)*

HyperSQL Overview



Zellweger Overview

- Teaches an improved menu display system for database searching.
- Rather than displaying “one long continuous list of menu items,” a menu can be displayed in a more condensed form.
- An “alphabet list” organizes menu options by their first letter.
- A “content list” divides menu options into ranges.
- A user selects a listed letter (or range) to see the database entries associated with that letter (or range).

The present invention discloses a menu authoring system that generates a tab list menu that links to a set of sublists which, previously, represented one long continuous list of menu items. With the present invention the menu developer has full control over how the original list is divided into intervals and how the tab menu list portray these divisions. Using an interactive configuration window the developer selects the source for these divisions, an alphabet list or the content itself, and can display the tab list menu prior to making permanent changes to the menu structure. The menu developer is free to select any list in a menu structure as a candidate for a tab list menu. When the new tab list menu is generated the present invention links this menu to the prior incoming and outgoing list objects.

*Ex. 1007, Zellweger, 2:30-43
(see also Paper 1, Petition at 20)*

Zellweger Overview

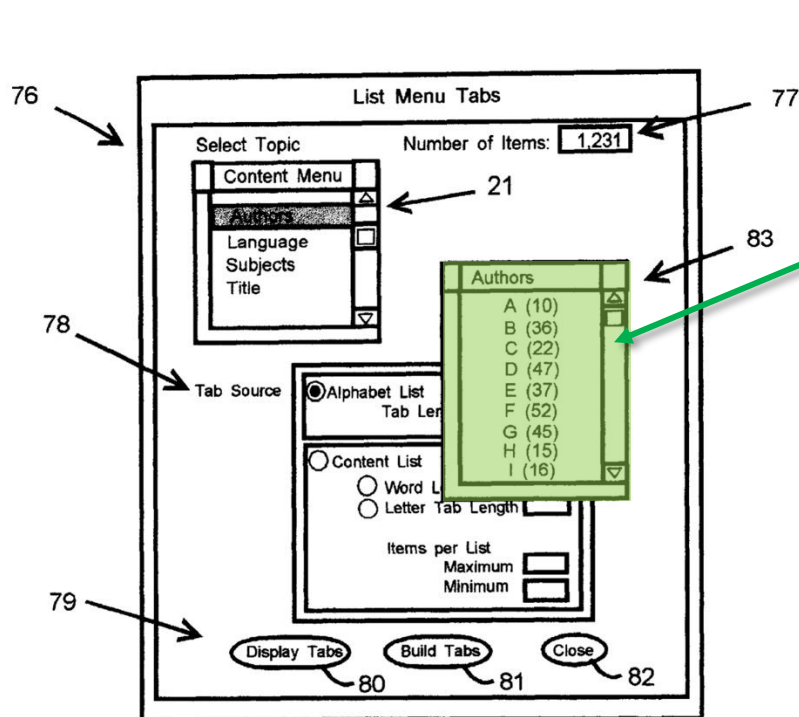


Fig. 6b

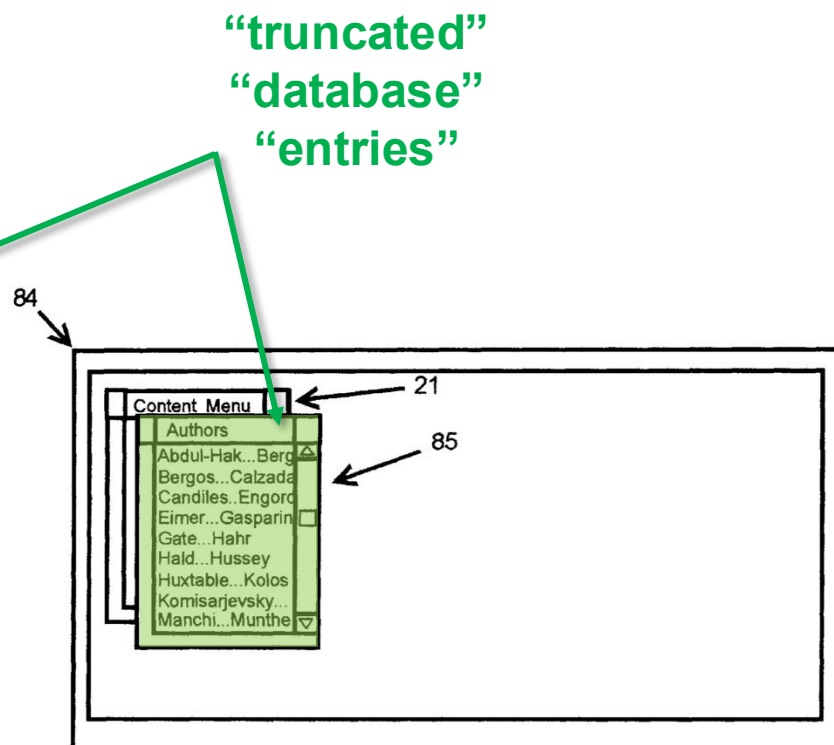


Fig. 7

*Ex. 1007, Zellweger, Figs. 6b, 7
(see also Paper 1, Petition at 20-21)*

Other References

**Microsoft Access
(Ex. 1009)**



***Teaches well-known database operations (e.g.,
result combining, use of logical operators)***

(see Paper 1, Petition at 21-22)

**Janes
(Ex. 1012)**



***Teaches database GUI with expandable
“nodes”***

(see Paper 1, Petition at 22-23)

**Spiegel
(Ex. 1013)**



***Teaches e-commerce system with shopping
GUI***

(see Paper 1, Petition at 23)

The Parties' Disputes

1. Is Zellweger prior art?
2. Does the prior art teach everything the claims require?
3. Can the claims be properly limited in the way Patent Owner proposes?

Patent Owner Bears the Initial Burden of Production with Respect to Any Alleged Prior Conception

“[W]hen a patent owner attempts to antedate an asserted prior art reference, the patent owner assumes a temporary burden of production.”

“[This] burden of production cannot be met simply by throwing mountains of evidence at the Board without explanation or identification of the relevant portions of that evidence.”

Parus Holdings, Inc. v. Google LLC, 70 F.4th 1365, 1371 (Fed. Cir. 2023)
(see also Paper 26, Reply at 3)

To Satisfy His Burden, Patent Owner Was Required to Make a Multi-Part Showing

1. Complete conception of the claimed subject matter prior to Zellweger's July 1999 filing;
2. Independent evidence corroborating the conception allegations; and
3. Reasonable diligence from Zellweger's July 1999 filing until Patent Owner's reduction to practice.

Paper 26, Reply at 2-3

Patent Owner *Did Not* Show Prior Conception



Complete conception of the claimed subject matter prior to Zellweger's July 1999 filing;

2. Independent evidence corroborating the conception allegations; and
3. Reasonable diligence from Zellweger's July 1999 filing until Patent Owner's reduction to practice.

Any Alleged Prior Conception Must Be *Complete, Definite, and Ready to Reduce to Practice*

“To have conceived of an invention, an inventor must have formed in his or her mind a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.”

“The idea must be so clearly defined ... that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation.”

Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1577 (Fed. Cir. 1996)
(see also *Paper 26, Reply at 4*)

Any Purported Conception Was Not Complete Until After Zellweger's July 1999 Filing

49. I continued working on developing a system that embodied my search-on-the-fly concepts throughout the summer of 1999. Late May through September was the busiest time of the year for my medical practice due to the large influx of people into the Hamptons in the summer months. I nevertheless continued to work on developing the search-on-the-fly system when I was not in surgery or seeing patients. I found the progress to be slow and frustrating, in part because I had no training or background as a software programmer or engineer.

*Ex. 2001, De Bellis Decl., ¶ 49
(see also Paper 26, Reply at 5)*

Any Purported Conception Was Not Complete Until After Zellweger's July 1999 Filing

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,

Paper 13, Patent Owner Response at 18

Patent Owner Was Required to Show Prior Conception of the Claimed Subject Matter

“Conception must include every feature or limitation of the claimed invention.”

REG Synthetic Fuels, LLC v. Nestle Oil Oyj, 841 F.3d 954, 962 (Fed. Cir. 2016)
(see also Paper 26, Reply at 4)

Patent Owner's Prior Conception Allegations Are Fundamentally Deficient

- No claim charts
- No technical documentation or any other information showing database features and operation
- Majority of claim limitations are entirely ignored

(See Paper 26, Reply at 6-8)

Patent Owner Does Not Address Numerous Claim Limitations at All

1. A method implemented on a computer for searching databases, comprising:

determining a database schema for a database, wherein the database includes database fields;

providing a list of the database fields, wherein the list includes a descriptor indicating a data category;

receiving a search selection for a database field on the provided list of the database fields;

determining a quantity of entries in the selected database field;

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.

*Ex. 1001, '720 Patent at Claim 1,
(see also Paper 26, Reply at 6-7)*

Patent Owner *Did Not* Corroborate His Conception Allegations

-  Complete conception of the claimed subject matter prior to Zellweger's July 1999 filing;
 -  Independent evidence corroborating the conception allegations; and
3. Reasonable diligence from Zellweger's July 1999 filing until Patent Owner's reduction to practice.

Independent Corroborating Evidence Is Required When Alleging Prior Conception

“When a party claims that its own invention predates, ... the oral testimony of the inventor ... must be corroborated.”

“This is to protect against fraud and provide[] an additional safeguard against courts being deceived by inventors who may be tempted to mischaracterize the events of the past.”

Mosaic Brands v. Ridge Wallet LLC, 55 F.4th 1354, 1363-65 (Fed. Cir. 2022)
(see also *Paper 26, Reply at 8*)

Testimonial Evidence Has Little Corroborative Value; Documentary Evidence Is Most Probative

“We have generally been most skeptical of oral testimony that is supported only by testimonial evidence of other interested persons.”

“[C]ontemporaneous documentary evidence provides greater corroborative value”

TransWeb, LLC v. 3M Innovative Props. Co., 812 F.3d 1295, 1302 (Fed. Cir. 2016)
(see also Paper 26, Reply at 8)

Patent Owner's Prior Conception Allegations Are Not Adequately Corroborated

- No documentation discussing the features and operations of Patent Owner's purported database product pre-dating Zellweger's July 1999 filing
- No independent witness testimony
- Patent Owner relies entirely on his own testimony and that of his sister

(See Paper 26, Reply at 8-11)

Patent Owner *Did Not* Show Diligence to Reduction to Practice

- ✗ Complete conception of the claimed subject matter prior to Zellweger's July 1999 filing;
- ✗ Independent evidence corroborating the conception allegations; and
- ✗ Reasonable diligence from Zellweger's July 1999 filing until Patent Owner's reduction to practice.

Patent Owner Has Not Shown an Actual Reduction to Practice

"In order to establish an actual reduction to practice, the inventor must prove that: (1) he constructed an embodiment or performed a process that met all the limitations of the interference count; and (2) he determined that the invention would work for its intended purpose."

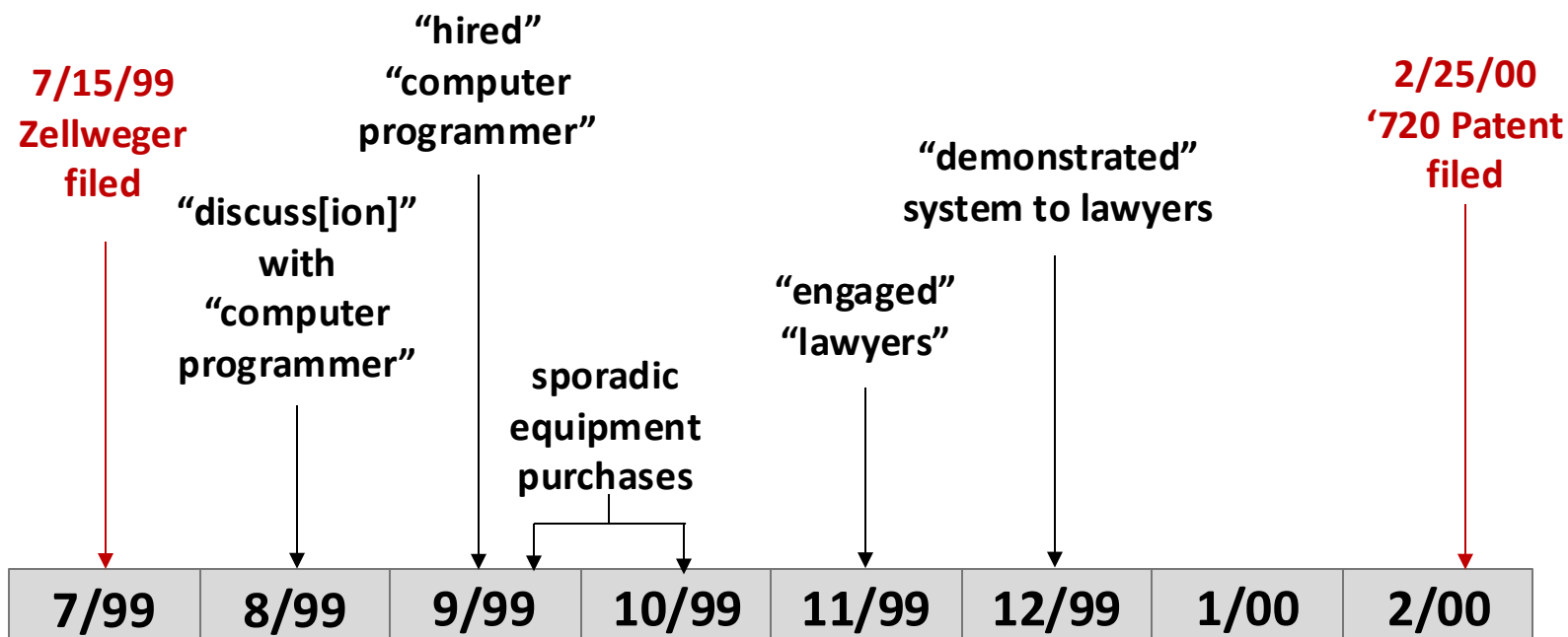
Mycogen Plant Sci. v. Monsanto Co., 243 F.3d 1316, 1332-33 (Fed. Cir. 2001)
(see also Paper 26, Reply at 11)

Patent Owner Did Not Proceed to Reduction to Practice Diligently

“Reasonable diligence must be shown throughout the entire critical period, which begins just prior to the competing reference's effective date and ends on the date of the invention's reduction to practice.”

*Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.,
841 F.3d 1004, 1007 (Fed. Cir. 2016)
(see also Paper 26, Reply at 12)*

Months Passed During the Critical Period Without Any Supported Activity



Limited activity:



No activity:



(See Paper 26, Reply at 12-14)

The Parties' Disputes

1. Is Zellweger prior art?
2. Does the prior art teach everything the claims require?
3. Can the claims be properly limited in the way Patent Owner proposes?

The '720 Patent and the Prior Art “Determin[e] a Database Schema” and “Provid[e] a List” of “Fields” in the Same Way

'720 Patent:

14. In yet another embodiment, the search-on-the-fly search engine may be incorporated into the structure of one or more of the databases 12, 13 and 15. The device 100 may interface

display signal 175 to the terminal 14. The database driver 170 sends a database access signal 171 to the database 12. Finally, a database qualifier 160 receives information 161 from the database driver 170 and provides a list 163 of available data fields from the database 12. As will be described later, the list of available data fields 163 may be displayed to a user at the terminal 14, and may be sorted and

Ex. 1001, '720 Patent, 4:15-21, 4:60-66

Cochran:

In response to a request by a user at remote computer terminal 720, the server 710 transmits information, at step 10, to the user's computer 720. The request to start the program is made by dialing the address of the remote server 710. The information transmitted from server 710 to the user's computer 720 includes a plurality of list identifiers and lists of search terms associated with those list identifiers.

Ex. 1004, Cochran, 7:9-15

(see also Paper 1, Petition at 24-25; Paper 26, Reply at 17)

Even If a Dynamic System Were Required, Cochran's System *Is* Dynamic

- **Does not** force a user to follow a static, unchanging search path.
- Instead, allows users to perform “unique” user-specific searches.
- Search GUI adapts—and changes displayed search options—to account for not only “available” database information, but also “already ... made” user selections.

arrangements work well. However, decision-making processes having a single hierarchical arrangement of choices do not adequately serve the needs of all users. For instance, in the example above, if the manufacturers' names and models are not known to the user, or if the price spread is very large, the user may have preferred to start with price.



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 search situation. The lists may be

The invention takes into account the information that is available in the database and the decisions that have already been made by a particular user during a particular search.

*Ex. 1005, Cochran, 2:46-52, 4:4-6, 4:20-22, 4:45-46
(see also Paper 1, Petition at 17-18; Paper 26, Reply at 18-19)*

Cochran's System Adapts to User Search Input

incorporated by reference herein. For instance, in the current example, after a search has been conducted based on search terms associated with list identifiers "Start of Travel", "Number of People", and "Location", updated lists of search terms would then be generated for each of the remaining list identifiers, "Lodging Type", "Lodging Name", "Amenities" and "Price".

FIG. 4b

The screenshot displays a window titled "Travel Search Database" with a sub-header "Travel Search Database - Selection Screen". It contains seven numbered search criteria, each with a dropdown menu and a "Search" button:

- 1. Start of Travel: January-March
- 2. Number of People: Disregard Occupancy 314
- 3. Location: Within a Region, Atlantic States: DE,DC,MD,PA,NJ,VA,WV
- 4. Lodging Type: Hotel/Motel 214
- 5. Lodging Name: Airport Inn 215
- 6. Amenities: Outdoor Swimming 315
- 7. Price: Economy 216

Below the search criteria, it shows "...Number Found: 1308" and a list of results: 217, 317. At the bottom, there are buttons: "View All", "View One", "Reset 4-7", "Start Over", and "... Help ...".

*"conducted" "search" with
"search terms"*

"updated lists"

*Ex. 1005, Cochran, 8:59-65; Fig.
(see also Paper 26, Reply at 20)*

Cochran and Zellweger Together Teach “Truncating” If a “Determin[ed] Quantity” “Exceeds a Specified Limit”

Cochran:

a search term. All of the available search terms for the list identifier are displayed in the expanded pick-box. If the expanded pick-box area is too small to display all of the available search terms, then scrolling is permitted within the confines of the expanded pick box. The expansion of pick boxes to enable display of a wide range of terms may be done in accordance with routine programming steps that are apparent to persons of ordinary skill in the computer programming arts.

Ex. 1005, Cochran, 10:57-65

Zellweger:

The present invention discloses a menu authoring system that generates a tab list menu that links to a set of sublists which, previously, represented one long continuous list of menu items. With the present invention the menu developer has full control over how the original list is divided into intervals and how the tab menu list portray these divisions.

Under the Alphabetical List option in 78 the developer can select the length of each tab. In the example given in FIG. 6a the length is set to one. This means there would be a single letter in each tab and there would be 27 entries in the list.

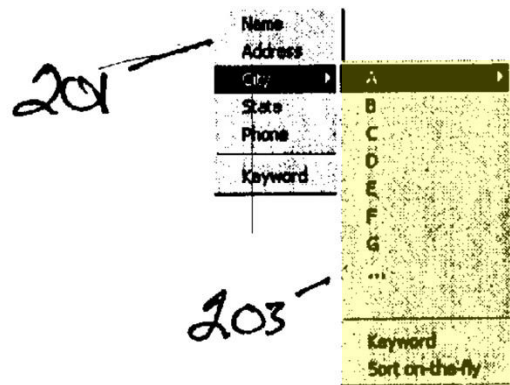
Under the Content List option in 78 the developer can specify a full word or length of letters for the first and last elements in a tab interval. In addition, the developer can specify the maximum and minimum number of entries in each tab list menu.

*Ex. 1007, Zellweger, 2:30-35, 4:21-31;
(see also Paper 1, Petition at 28; Paper 26, Reply at 21)*

Both the '720 Patent and the Prior Art "Truncat[e]" Displayed Database Entries in Exactly the Same Way

'720 Patent:

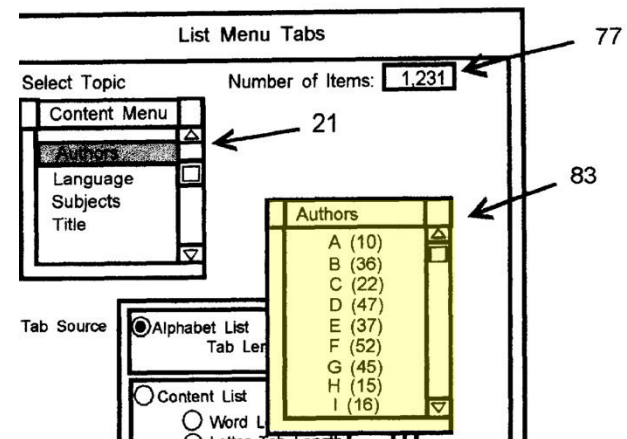
available. In FIG. 10, the menu 203 shows the results of the truncation with only the first letter of a city name displayed.



Ex. 1001, '720 Patent,
9:59-60; Fig. 10 (cropped)

Zellweger:

FIG. 6b depicts configuration window 76 after the Display Tabs button 80 was selected by the developer. In this example of the interactive capabilities of the present invention 76 generates and displays a sample tab list menu 83, from the settings in FIG. 6a, an alphabet list source having a single letter. Next to each entry in 83 is the number of elements associated with the alphabet letter interval. Note



Ex. 1007, Zellweger, 4:36-42; Fig. 6b (cropped)
(see also Paper 1, Petition at 31-32; Paper 26, Reply at 21)

The Parties' Disputes

1. Is Zellweger prior art?
2. Does the prior art teach everything the claims require?
3. Can the claims be properly limited in the way Patent Owner proposes?

Patent Owner Proposes a Series of Narrow Claim Constructions

Claim Language	Patent Owner's Position
"determining a database schema for a database"	Means "ascertaining or identifying the logical structure of data stored in computerized files" and requires a system that is not "preconfigured"
"providing a list of the database fields"	Means that "a list of the database fields" is "determined at the time the search query was submitted"
"determining a number of entries in the selected database field"	Means that "at the time a database search is executed, the search engine program determines how many entries exist in the database field"
"if the [determined] quantity exceeds a specified amount, truncating data"	Means "reducing the amount of data returned as a result of the database search"
"wherein the truncation reduces characters in one or more entries and the truncated data represents each of the entries in the selected database field"	Means that "characters are deleted from an entry" and requires "a complete representation of the entire content of a selected data field on one page"

Paper 13, Patent Owner Response at 12-15

Patent Owner's Proposed Claim Constructions Invite Error

1. A method implemented on a computer for searching databases, comprising:

determining a database schema for a database, wherein the database includes database fields;

providing a list of the database fields, wherein the list includes a descriptor indicating a data category;

receiving a search selection for a database field on the provided list of the database fields;

determining a quantity of entries in the selected database field;

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.

→ Does not require dynamism or exclude preconfigured systems.

→ No requirement that list be assembled and quantity determined at time search query submitted.

→ Truncated data only required to “represent[] each of the entries”

*Ex. 1001, '720 Patent at Claim 1,
(see also Paper 26, Reply at 14-16)*

CERTIFICATE OF SERVICE

The undersigned hereby confirms that the foregoing paper was caused to be served on March 17, 2025 via email upon Patent Owner at the address indicated:

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