

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Kahoot! AS
Petitioner

v.

INTERSTELLAR INC.
Patent Owner

Patent No. 10,339,825

**DECLARATION OF DR. GREGORY D. ABOWD
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,339,825**

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I, Dr. Gregory D. Abowd, declare as follows:

I. INTRODUCTION

1. I have been retained by Kahoot! ASA (“Petitioner”) as an independent expert consultant in this proceeding before the United States Patent and Trademark Office (“PTO”) regarding U.S. Patent No. 10,339,825 (“the ’825 patent”) (Ex. 1001).¹ I have been asked to consider whether certain references disclose or suggest the features recited in claims 1-5, 9, 11, 14-18, 22, and 24 of the ’825 patent. My opinions are set forth below.

2. Petitioner is paying a rate of \$750/hour for my work in this proceeding. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of this or any other proceeding. I have no other interest in this proceeding.

II. BACKGROUND AND QUALIFICATIONS

3. From 1982-1986, I attended the University of Notre Dame, receiving the degree of Bachelor of Science in Honors Mathematics *summa cum laude*.

¹ Where appropriate, I refer to exhibits that I understand are to be attached to the petition for *Inter Partes* Review of the ’825 patent.

4. I received a Rhodes Scholarship and attended the University of Oxford in England from 1986-1989. There, I studied formal methods of software engineering applied to the development and analysis of interactive systems, under the supervision of Mr. Bernard Sufrin. While at the University of Oxford, I received the degree of M.Sc. in Computation in 1987 and worked towards the degree of D. Phil. in Computation.

5. In 1989, I became a research associate in the Department of Computer Science at the University of York in England, where I continued my doctoral research for the University of Oxford. I received the degree of D. Phil. in Computation from Oxford in 1991 and became a postdoctoral research associate at the University of York until September 1992. As a postdoctoral research associate, I worked on formal methods applied to interactive systems, in particular a European project, AMODEUS, under the supervision of Prof. Michael Harrison.

6. I authored a textbook on the topic of Human-Computer Interaction with colleagues while I was working at the University of York.

7. From September 1992 through June 1994, I was a postdoctoral research scientist at the Software Engineering Institute and School of Computer Science at Carnegie Mellon University in Pittsburgh, Pennsylvania, where I developed analytical tools and techniques to examine high-level software architectural designs

and further explored applications of mathematical models to analyze interactive systems.

8. In July 1994, I became an Assistant Professor on the faculty in the College of Computing at the Georgia Institute of Technology in Atlanta. I received tenure and became Associate Professor in 2000 and became Full Professor in 2007. I was named a Distinguished Professor at Georgia Tech in 2008 and was promoted to a University System of Georgia Regents' Professor in 2012.

9. At Georgia Tech, I developed interests in Human-Computer Interaction (HCI) applied to mobile and ubiquitous computing systems. I developed the concept of "living laboratories" research applied to classrooms and homes, and created two large efforts, Classroom 2000 and the Aware Home. In the early 2000s, I developed an interest in health and technology and have done much work in applications of mobile and embedded technologies in that space, with an emphasis on autism and chronic childhood disease.

10. I have authored or co-authored over 200 research papers and articles, many of which were presented in prestigious venues such as the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), User Interface and Software Technology (UIST), Mobile HCI, and the major conferences on

wearable, ubiquitous and pervasive computing (ISWC, Ubicomp, Pervasive). A complete list of my publications is contained in my CV (Ex. 1003).

11. I am an elected member of the ACM SIGCHI Academy, the highest professional distinction for this professional society, and am an elected Fellow of the ACM, also its highest distinction. I was awarded the ACM SIGCHI Social Impact Award in 2007 and the ACM Eugene Lawler Humanitarian Award in 2009, both in recognition of my work on human-centered applications of technology for aging and autism. I was awarded the UbiComp 10-Year Impact Award in 2022 and 2023, and the ACM SIGCHI Lifetime Research Award in 2023.

12. In 2016, I was promoted to a Regents' Professor at Georgia Tech, the highest academic rank in the University System of Georgia. I was named the J.Z. Liang Chaired Professor in the School of Interactive Computing in 2016 and was appointed Associate Dean for Off-Campus and Special Initiatives in the College of Computing in 2017. In 2021, I became the Dean of the College of Engineering and Professor of Electrical and Computer Engineering at Northeastern University.

III. MATERIALS REVIEWED

13. The opinions contained in this Declaration are based on the documents I reviewed, my professional judgment, as well as my education, experience, and knowledge regarding motion sensing techniques and devices.

14. In forming my opinions expressed in this Declaration, I reviewed the '825 patent (Ex. 1001), the prosecution file history for the '825 patent (Ex. 1004); U.S. Patent No. 8,231,470 ("Feeney") (Ex. 1005); U.S. Patent No. 10,861,343 ("Rogers") (Ex. 1006); U.S. Patent Pub. No. 2004/0004325 ("Maurseth") (Ex. 1007); U.S. Application No. 11/539,179 ("Feeney 179") (Ex. 1008); U.S. Patent No. 6,752,396 ("Smith") (Ex. 1009); U.S. Patent No. 6,086,381 ("Downs") (Ex. 1010); U.S. Pat. Pub. No. 2010/0030578 ("Siddique") (Ex. 1011); U.S. Patent Pub. No. 2009/0104591 to Panetta ("Panetta"), and any other materials I refer to in this Declaration in support of my opinions.

15. The opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment.

IV. POSITA

16. I am familiar with the level of ordinary skill in the art with respect to the alleged inventions of the '825 patent as of what I understand is the filing date, April 4, 2012, of the patent application from which I understand the '825 patent issued. Specifically, based on my review of the '825 patent, the technology, the educational level and experience of active workers in the field, the types of problems faced by workers in the field, the solutions found to those problems, the sophistication of the technology in the field, and drawing on my own experience, I

believe a person of ordinary skill in art (“POSITA”) would have had would have had an undergraduate degree in electrical engineering, computer engineering, computer science, or a related field, and two years of experience in the field of web-based technologies. More education can supplement practical experience and vice versa. Depending on the engineering background and level of education of a person, it would have taken a few months for the person to become familiar with the problems encountered in the art and become familiar with the prior and current solutions to those problems.

17. All of my opinions in this declaration are from the perspective of one of ordinary skill in the art during the relevant timeframe (early 2010s, including the time preceding the April 4, 2012 filing date of the ’825 patent). My opinions have also been guided by my appreciation of how a POSITA would have understood the claims and the specification of the ’825 patent during this time frame.

18. Based on my experience and expertise, it is my opinion that certain prior art references disclose or suggest all the features recited in claims 1-5, 9, 11, 14-18, 22, and 24 (“the challenged claims”) of the ’825 patent, as I discuss in detail below. (*See* below at Sections IX.A-F; *see also* below at Section VIII (Overview of the Prior Art).)

V. TECHNICAL BACKGROUND

19. In this section, I present a brief overview of certain aspects of web-based technologies at the time of the alleged invention that will assist in better understanding the '825 patent and the prior art that I discuss in this declaration. The '825 patent is directed to a web application that facilitates live on-line academic competition between teams and individuals. Such a system, including multiplayer web applications, was well known long before the alleged invention of the '825 patent, as explained below. The '825 patent describes various computer hardware and software concepts that were well known long before the alleged invention date.

A. Basic Computing Principles

20. The '825 patent describes and claims various computing components such as a processor, a memory, a “computing environment,” and “internet applications,” and these were fundamental aspects of computing that were known decades before the alleged invention date of the '825 patent. (Ex. 1001, 40:1-39.)

21. For example, Feeney discloses a system 10 that includes a server 12 for managing a contest among players over the internet. (Ex. 1005, 3:5-15, 3:39-54, 4:14-28, FIG. 1.) As shown in Figure 1 (reproduced below), a plurality of players 31, 32, and 33 participate in a contest over the internet using their respective devices 21-24. (*Id.*)

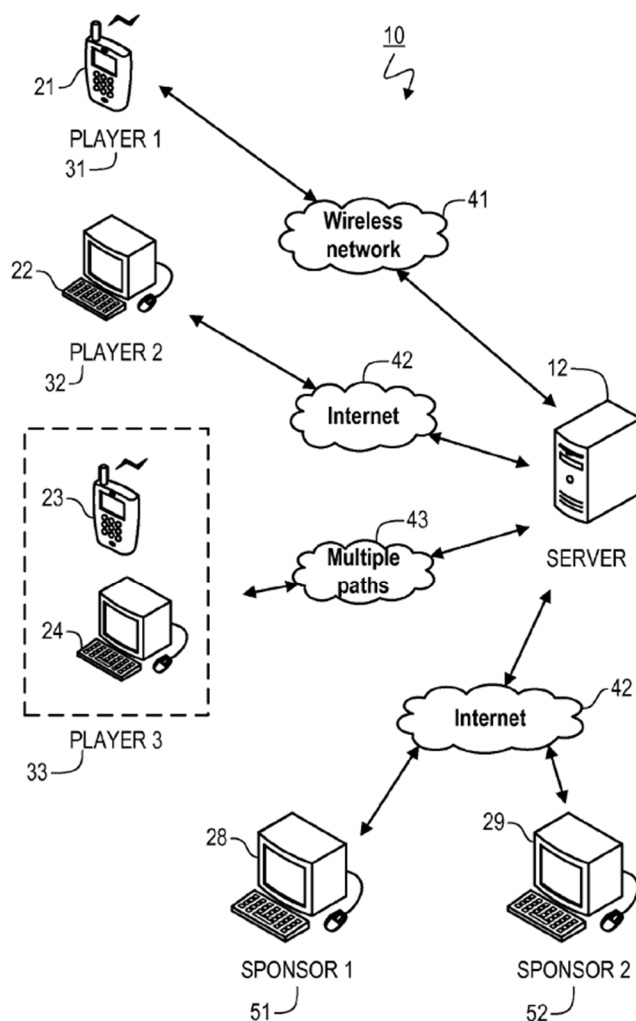


FIG. 1

(*Id.*, FIG. 1 (block diagram of system 10).)

22. Feeney explains that these devices are programmable general purpose computing devices. (*Id.*, 3:55-63 (“Server 12 can be implemented as a single physical device, but more commonly will be implemented as a server cluster, with redundancy, appropriate load-balancing hardware and software, and different

functionality distributed across different physical boxes, as is well known in the art. In one embodiment, different physical devices are used for communicating across different kinds of networks (e.g., directly over the Internet, by SMS messaging, or using a proprietary network or wireless protocol).”), 30:33-42 (“Suitable general-purpose programmable devices for use in implementing the present invention may be obtained from various vendors. In the various embodiments, different types of devices are used depending upon the size and complexity of the tasks. Such devices can include, e.g., mainframe computers, multiprocessor computers, workstations, personal computers and/or even smaller computers, such as PDAs, wireless telephones or any other programmable appliance or device, whether stand-alone, hard-wired into a network or wirelessly connected to a network.”).)

23. A POSITA would have understood that Feneey’s configuration of computing devices (e.g., instructions in software code stored in memory and executable by a processor to achieve desired functionality) was typical of computers going back many decades before the alleged invention of the ’825 patent. More recently (but still before the alleged invention date), such a computing architecture has been well-known for implementing internet applications accessible to devices, e.g., cellular phones and handheld computing devices such as portable digital assistants (PDAs) or personal information managers (PIMs).

B. Internet Applications

24. It was also well known before the alleged invention of the '825 patent that users could interact via internet applications. For example, Feeney describes “the players 31-33 will have installed a contest interface application on the devices 21-24 that they will be using, an example of such an interface application being described in greater detail below.” (Ex. 1005, 4:9-13.) Feeney also describes generic web interfaces, applications, and widgets. (*Id.*, 10:53-62 (“In certain embodiments of the invention, the individual players access information for main contest 102 through a Web interface using a generic Web browser. However, in the preferred embodiments the players also (or instead) can access such information through a separate, dedicated and/or stand-alone application that resides on their networked devices 21-24. More preferably, such an application is implemented as a desktop widget or any other application that can be opened, used and then closed independently of the opening, use and closing of the player's generic Web browser.”).)

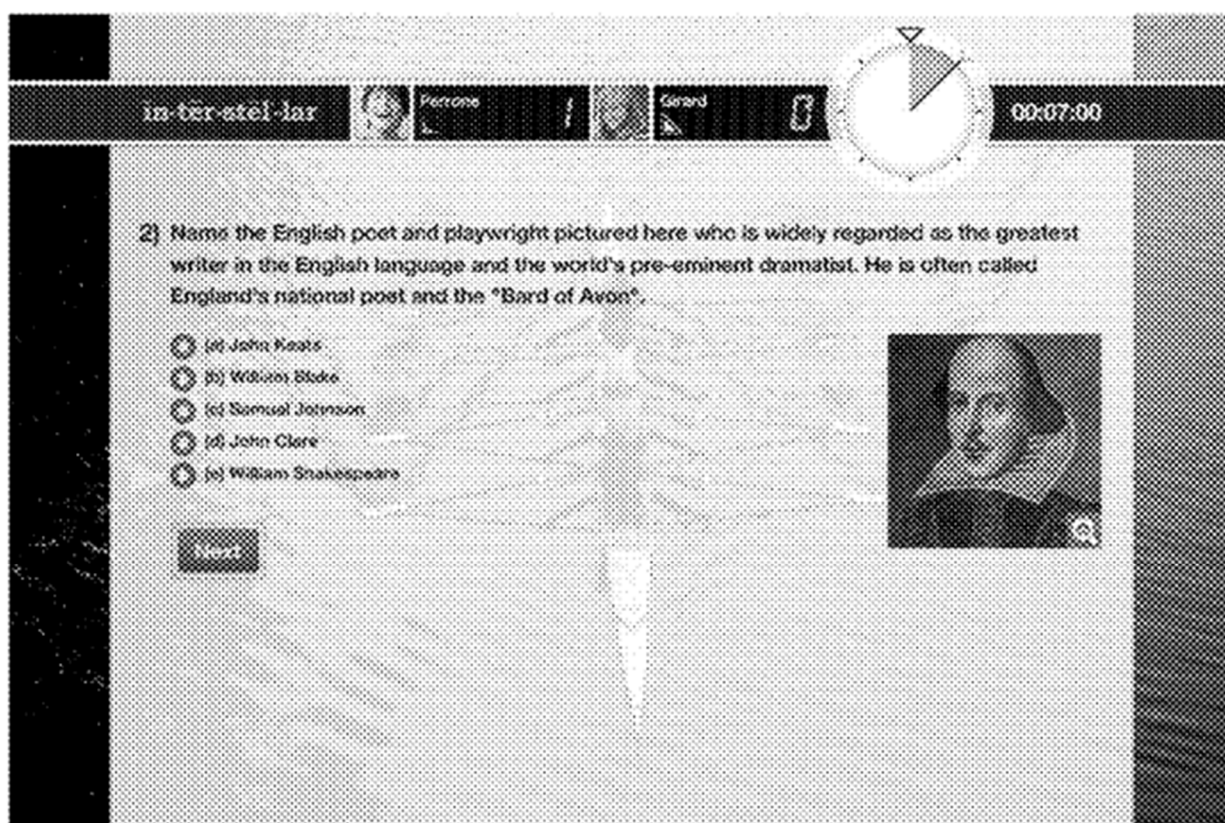
25. Thus, a POSITA knew prior to the alleged invention of the '825 patent how to conduct multiplayer contests via internet applications and knew how to implement such internet applications in various contexts.

VI. OVERVIEW OF THE '825 PATENT

26. It is my understanding that the '825 patent issued from U.S. Application No. 13/439,305, filed on April 4, 2012. (Ex. 1001, Cover.)

27. The '825 patent discloses a “web application [that] facilitates live on-line academic competition between teams and individuals.” (Ex. 1001, Abs.) In one embodiment, the web application allows questions to be presented to the contestants and a scoreboard to be displayed on the contestant devices. (*Id.*, 2:29-58.) The system displays an individual score or a team score on the scoreboard. (*Id.*, 18:18-26, 32:22-28.) The scoreboard also displays a “time mechanism” that “shows where the Team member is in relation to his/her opponent, how much time has elapsed in the test and consecutively for each question, and whether he/she is on pace to finish on time.” (*Id.*, 17:29-38, 17:60-18:18.)

28. Figure 109 (reproduced below) “illustrates the scoreboard during a contest.” (*Id.*, 39:29.)



(*Id.*, FIG. 109.)

29. The scoreboard includes a “clock figure” and a “radius line inside the clock figure marks the proportion of time remaining in the competition.” (*Id.*, 17:62-65; *see also id.*, 38:33-38.) The “radius line rotates around the clock figure until no time remains.” (*Id.*, 17:65-66, 38:37-38.) The clock figure includes “marks around the tube [to] represent each question.” (*Id.*, 18:3-4, 38:42-46.) “As soon as the radius line reaches a mark in the tube, the area behind it fills in as grey,” which

“signifies that the average amount of time allotted for a particular question has elapsed.” (*Id.*, 18:4-11, 39:29-37.)

VII. CLAIM CONSTRUCTION

30. I have given all the claim terms (except one described below) of the challenged claims their plain and ordinary meaning, as would be understood by a POSITA, at the time of the alleged invention, which I understand is early 2010s (including April 4, 2012) having taken into consideration the language of the claims, the specification, and the prosecution history of record.

31. Independent claim 1 recites “providing a real time scoreboard with time clock to each contestant processing device that *displays an individual contestant’s progress with respect to both the time frame for answering questions and questions answered correctly* while answering the series of questions during an academic competition.²” (Ex. 1001, 40:63-41:1 (emphasis added).) Claim 14 recites the same limitation. (*Id.*, 42:54-59.) As I explain below, in the context of the ’825 patent, displaying “*an individual contestant’s progress with respect to [] the time frame for answering questions*” while answering the series of questions presented to the contestant, refers to displaying the total time that is remaining or has elapsed for

² This limitation is analyzed in Section IX under [1.f].

answering the series of questions. The total time remaining or elapsed for the “series of questions” is different from the time remaining or elapsed for each question in the series of questions. I understand that the above is Petitioner’s interpretation of the relevant limitation and I have applied this understanding in my analysis.

32. The claim itself compels the proffered construction because it recites “presenting [] a *series of test questions* to the contestant processing devices of the individual contestants of competing teams for response in a *time frame allocated for the academic competition*” and “display[ing] an individual contestant’s progress with respect to [] *the time frame* for answering *questions*” (plural for the “series of test questions) as opposed to reciting display of progress with respect to an individual question (singular).

33. The specification also repeatedly explains that the invention allows the contestants to keep track of the time remaining to answer the entire set of questions by displaying either the time remaining or time elapsed in the *entire contest*. (Ex. 1001, 2:9-12 (“[o]f particular value, a specialized clock not only keeps track of time remaining, but alerts the student as to whether he/she is on pace to finish the questions on time.”), 17:29-38 (“The time mechanism shows where the Team Member is in relation to his/her opponent, how much time has elapsed in the test and

consecutively for each question, and whether he/she is on pace to finish on time.”), 17:60-65 (“The radius line rotates around the clock figure until no time remains.”).)

34. Finally, during prosecution, patentee represented that the Panetta and Lavanchy prior art do not disclose a real time scoreboard that “permits each individual contestant to track his/her and his/her opponent's progress *with respect to both the time frame for answering questions* and questions answered correctly *while answering the series of questions during an academic competition.*” (Ex. 1004, 478 (emphases in original).)³ Patentee explained that in “Panetta and Lavanchy, a separate time component operates for each question” whereas “the claimed academic competition allocates an undivided time period to all players to answer the **entire** series of questions.” (*Id.* (emphasis added).) According to patentee, these references do not disclose a feature whereby the contestant can know “how much time remains in the contest.” (*Id.*) Thus, in my opinion, patentee represented and confirmed that the claim language “progress *with respect to both the time frame for answering questions . . . while answering the series of questions during an academic competition*” refers to progress with respect to the time remaining or elapsed for the entire contest (i.e., the time remaining or elapsed for answering the series of

³ The emphasized claim language is identical to that in issued claims 1 and 14.

questions as opposed to the time remaining or elapsed for answering an individual question in the series of questions).

VIII. OVERVIEW OF THE PRIOR ART

A. Feeney

35. Feeney discloses a system 10 that includes a server 12 for managing a contest among players over the internet. (Ex. 1005, 3:5-15, 3:39-54, 4:14-28, FIG. 1.) Server 12 further includes a contest administration system 80. (*Id.*, 4:57-64.) Contest administration system 80 (seen below in Figure 2) includes a database management component 82 that manages contest information stored on storage device 83. (*Id.*, 4:65-5:6; FIG. 2.) “[A]ll of the player, sponsor, and other information in connection with the contest” is “preferably [] stored in . . . storage device [] 83.” (*Id.*)

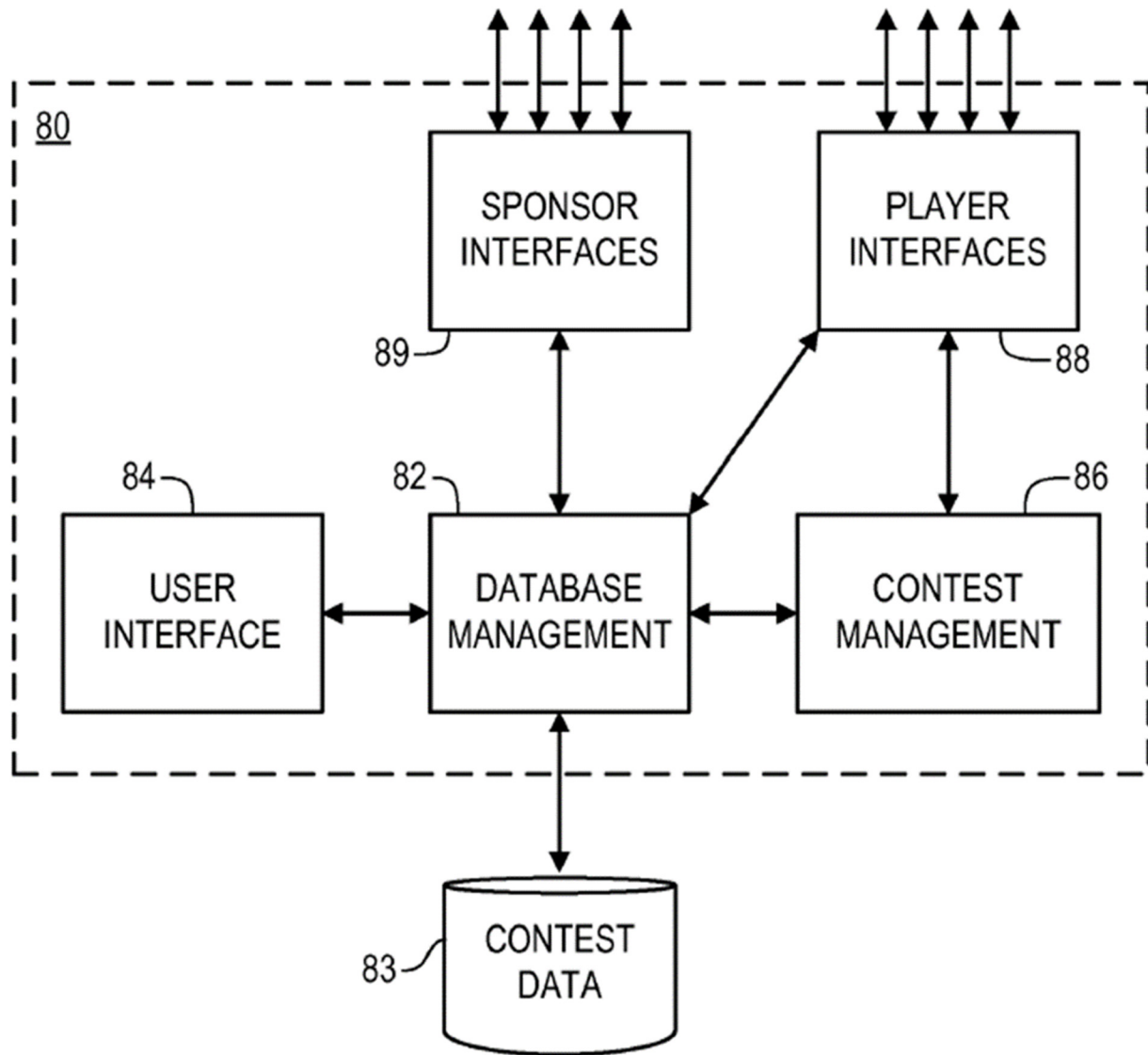


FIG. 2

(*Id.*, FIG. 2.)

36. As shown in Figure 1 (reproduced below), a plurality of players 31, 32, and 33 participate in a contest over the internet using 42 their respective devices 21-24. (*Id.*) The individual players may compete as part of teams, referred to as “rings.” (*Id.*, 9:7-17, 9:26-29, 17:41-44, 21:51-62 (“In any or all of the contests described herein, players can . . . compete as part of a team (sometimes referred to herein as a ‘team-ring’) in which the rings compete against each other”).)

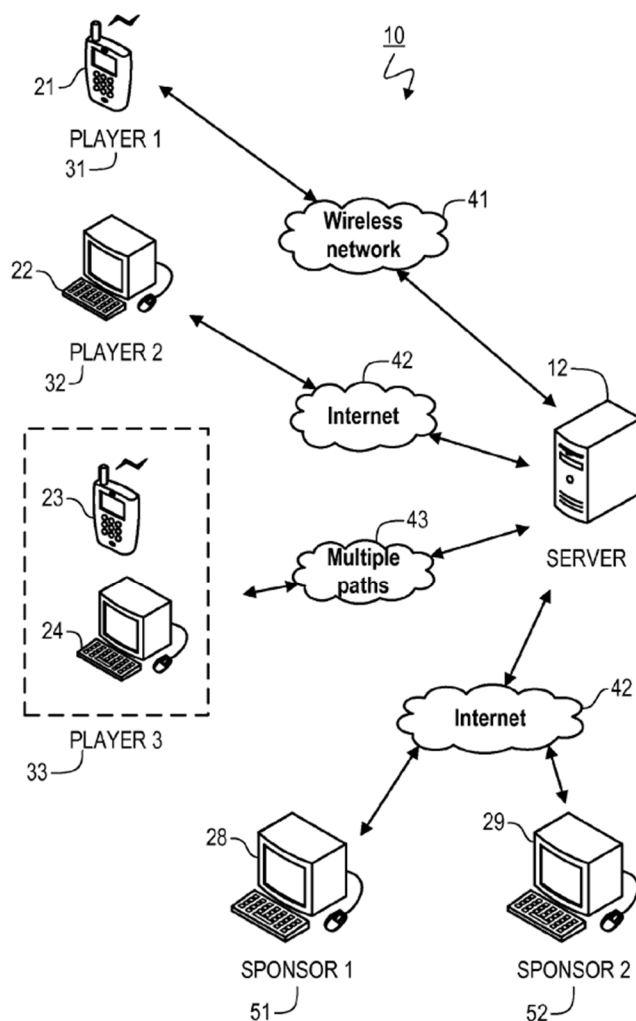


FIG. 1

(*Id.*, FIG. 1.)

37. As part of the contest, each of the players receives a stream of questions/problems on their respective device. (*Id.*, 3:10-15, 20:9-25, 20:47-60, 21:5-7.) Upon receiving responses to those questions, “server 12 preferably

calculates performance indicia for each of the various players” or their teams; and provides such indicia for display on the player devices through a user interface. (*Id.*, 21:12-32; *see also id.*, 5:17-37, 12:55-13:24, 22:15-18.) An example of such a user interface is user interface 300 (described with reference to Figure 5 shown below), which can simply be a web page “provided entirely by server 12” or it can be a user interface that is part of a stand-alone application on the user’s device. (*Id.*, 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.)

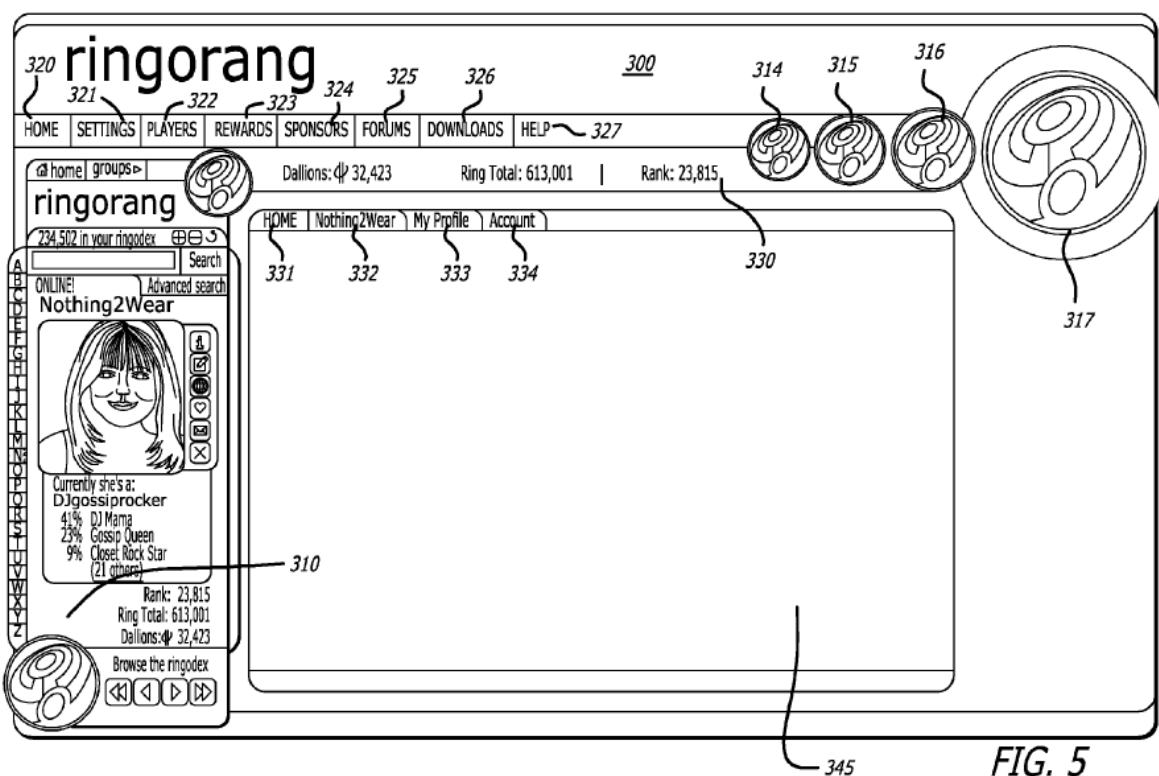


FIG. 5

(*Id.*, FIG. 5.) These rings (i.e., teams) can be created by the players themselves. (*Id.*, 21:63-22:13.) To create a team, a player can “search through the universe of contest

players” and select players to join his/her ring. (*Id.*) For example, the player can search for other players through a basic search (window 420) and advanced search 425 in the user interface 300. (*Id.*, 18:28-19:14, FIGS. 5, 6; *see also id.*, 14:46-52 (explaining that Ringodex 380 can be implemented as part of user interface 300 as a webpage).)

B. Rogers

38. Rogers is directed to “an online test platform adapted to facilitate the development, delivery, and management of educational tests with interactive participation.” (Ex. 1006, Abs.) Rogers discloses that the “test taker (e.g. student) interfaces to allow each participant to view, navigate, and interact with aspects of the online test platform that are intended to meet their needs.” (*Id.*) As shown in figure 8 (reproduced below), Rogers discloses providing a test with a series of questions (e.g., 45) to be answered within a certain time (e.g., 20 minutes). (*Id.*, 19:15-20, FIG. 8.)

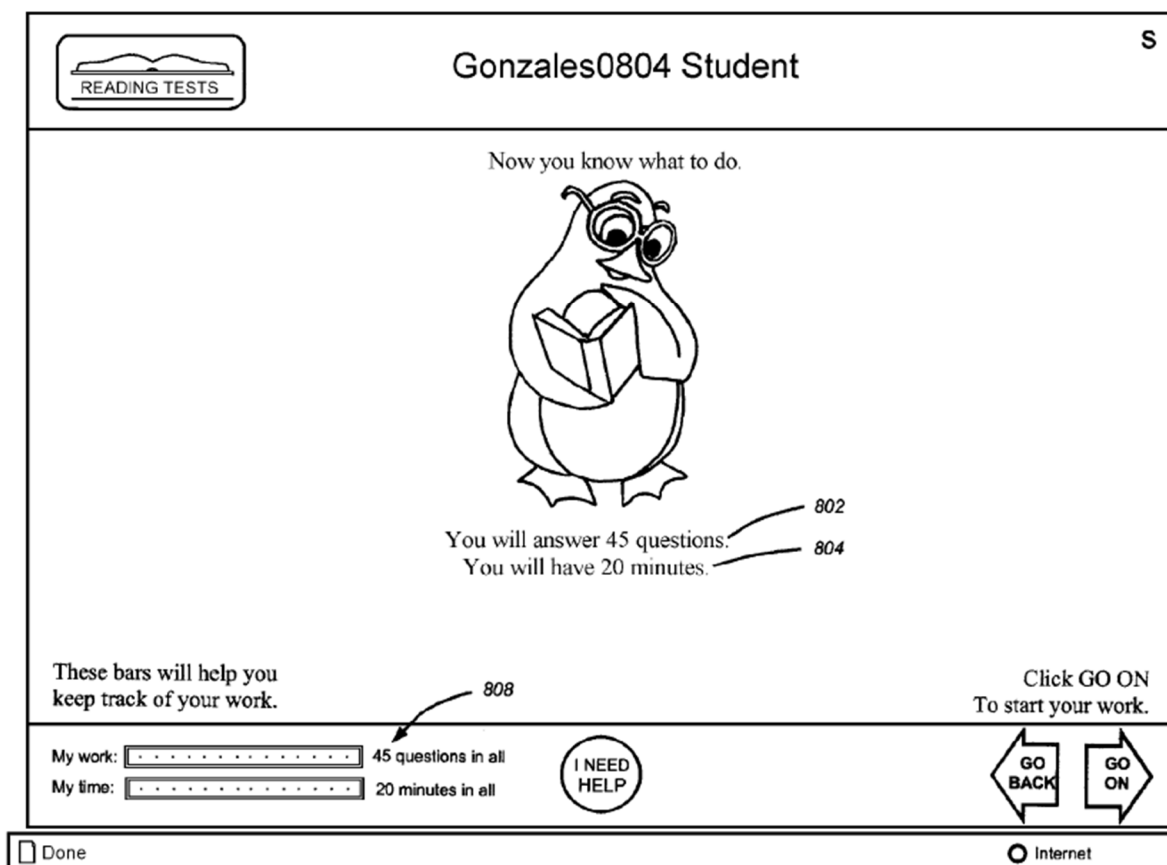


FIG. 8

(*Id.*, FIG. 8.)

39. As shown in figures 10-12 (reproduced below), Rogers discloses displaying progress indicators 808 to the test taker to indicate progression through the tests. (*Id.*, 20:42-21:16, FIGs. 10-12.)

The screenshot shows a web application interface for a reading test. At the top left is a logo with a book icon and the text "READING TESTS". To its right is the text "vocab99". In the top right corner is a small letter "S". The main content area displays the question "1. a nice gift." followed by four radio button options: "present", "birthday", "friend", and "young man". At the bottom of the interface is a navigation bar. On the left, it shows "My work:" with a progress bar and "3 questions in all", and "My time:" with a timer bar and "20 minutes in all". In the center is a circular button labeled "I NEED HELP". On the right is a rectangular button labeled "CHECK MY WORK", which is pointed to by a line and the number "1102". The very bottom of the screen has a status bar with a "Done" button on the left and an "Internet" status indicator on the right.

READING TESTS

vocab99

S

1. a nice gift.

☐ present

☐ birthday

☐ friend

☐ young man

1102

My work: 3 questions in all

My time: 20 minutes in all

I NEED HELP

CHECK MY WORK

Done Internet

FIG. 11

(*Id.*, FIG. 11.)

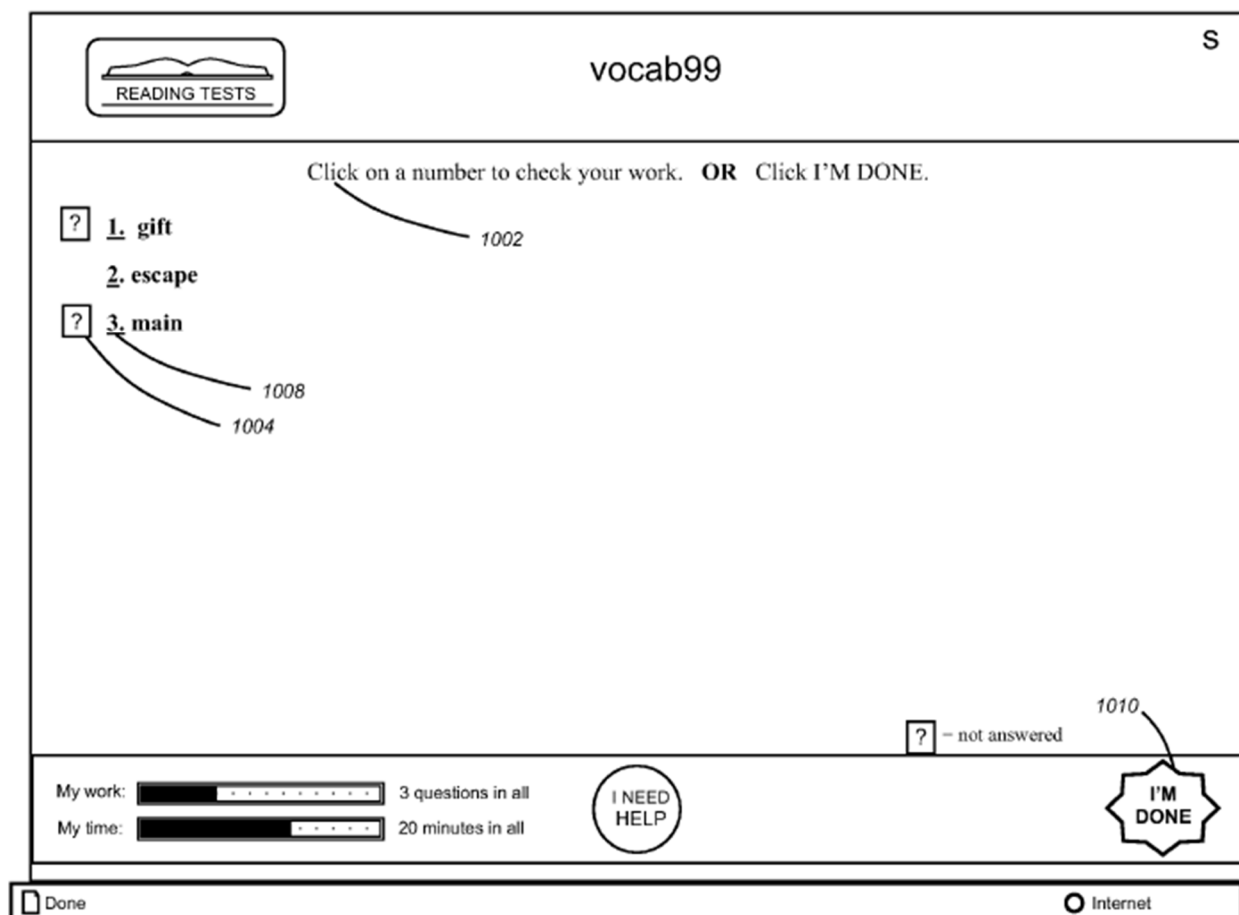


FIG. 10

(*Id.*, FIG. 10.)

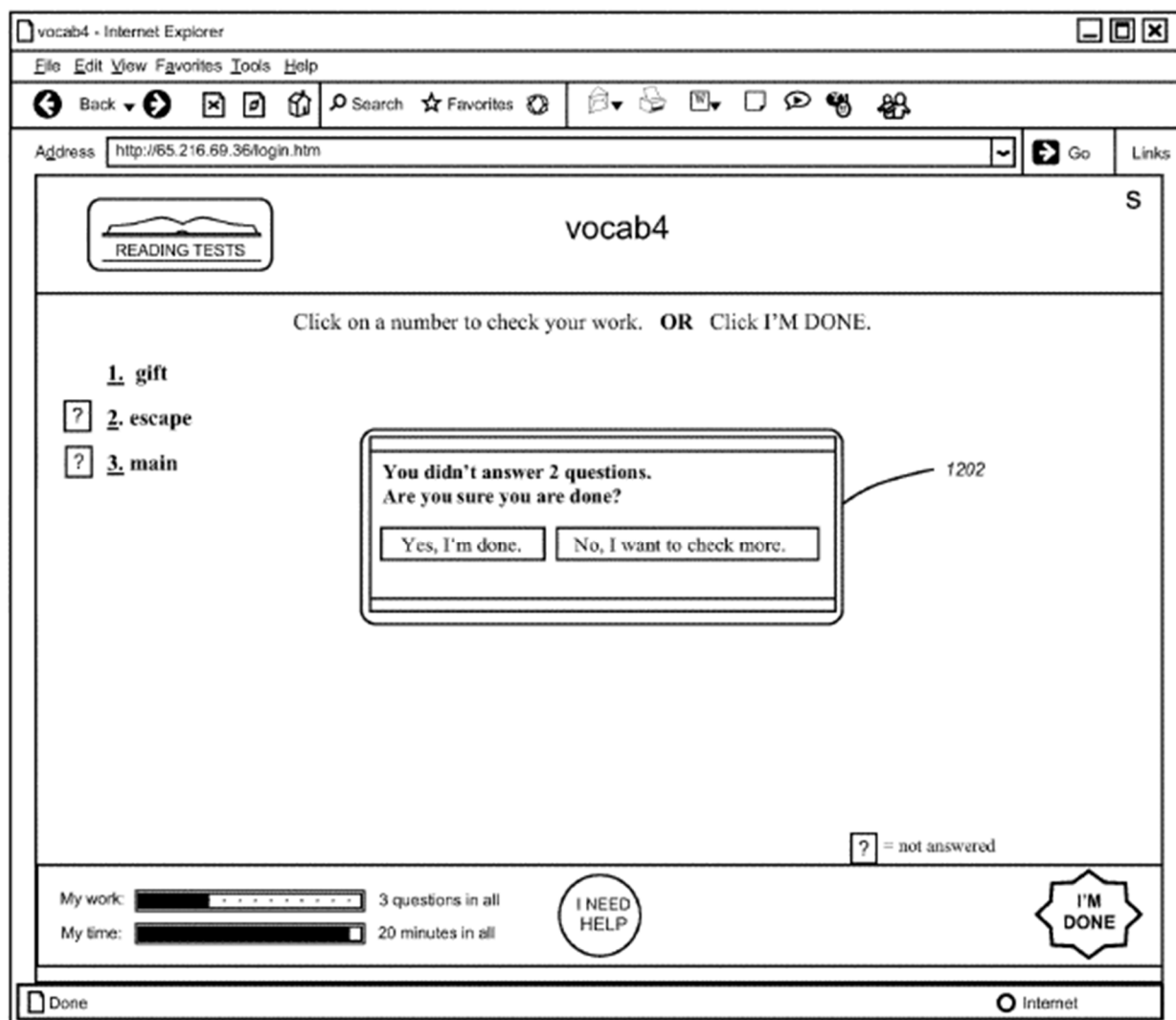


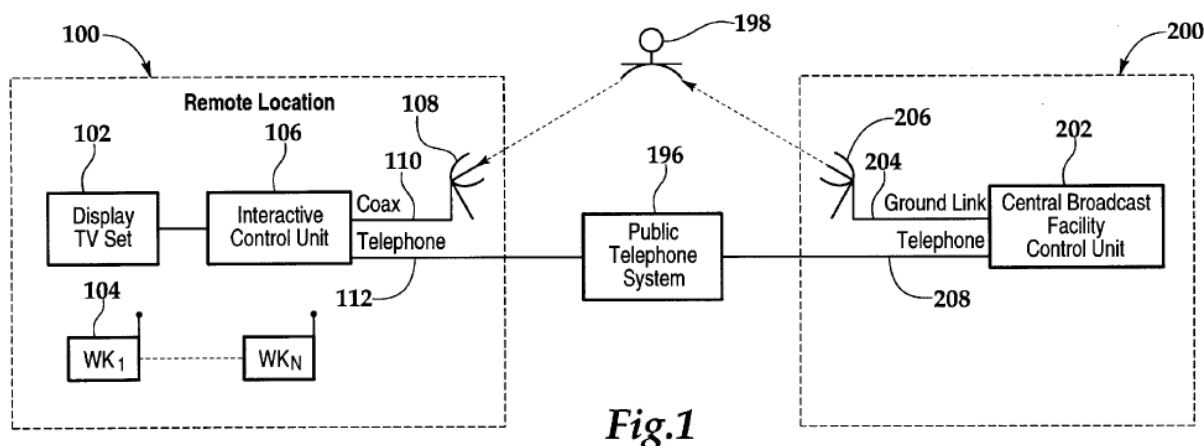
FIG. 12

(*Id.*, FIG. 12.)

C. Downs

40. Downs discloses an “interactive learning system . . . that can provide simultaneous competitions between participants at remote locations.” (Ex. 1010, 1:8-15.) A school is an example of a “remote location.” (*Id.*, 3:1-4.) For example,

a teacher at a remote location can execute a competition by creating a competition on an interactive control unit 106, which “stores competitions and displays them on the display television set 102” to the students. (*Id.*, 3:5-39.)



(*Id.*, FIG. 1.)

41. “Competitions controlled by the interactive control unit 106 are input in one of two principal ways.” (*Id.*, 3:31-32.) The teacher can either create their own competition on unit 106 or unit 106 can receive competitions created by employees at a central broadcast facility. (*Id.*, 3:31-43.) A competition consists of questions and answers, and a teacher can edit the competition provided by the central broadcast facility by adding or deleting questions therefrom. (*Id.*, 7:16-65.)

D. Siddique

42. Siddique discloses a system to “collaborate with other users in the online environment” (Ex. 1011, Abs.) to create customized user models of a person

(*id.*, [98]). The user can then add apparel items to the user models to see how the apparel would look on the person before buying the apparel. (*Id.*) Modeling apparel enables interactive shopping and the “user models may be exported to gaming environments including third party games.” (*Id.*) The user can also use background photos to simulate how the user model and apparel would look in various environments. (*Id.*, [187], FIG. 14.)

E. Panetta

43. Panetta discloses “a method of practicing educational exercises” in which “teams of students [] compete against each other.” (Ex. 1012, Abs.) For example, “questions are posed to competing teams of students who compete against each other in a baseball game format.” (*Id.*, [0022].) A teacher “establishes teams of students” and “each player logs in with their password.” (*Id.*, [0033].) The players from opposing teams take turns answering questions. (*Id.*, [0044] (“The premise is simple. Students answer the questions correctly, make hits and score runs. Correctness and speed are a must, with the emphasis on being correct. In an exemplary embodiment, a series of seven questions are posed each inning, each progressively harder, each in perfect compliment with the teaching syllabus.”).)

F. Maurseth

44. Maurseth discloses “a method for teaching and developing the culture, values, and skills of an organization using an educational game.” (Ex. 1007, Abs.) The method describes “separating an organization into teams, having the teams learn certain skills, and then reintegrating the members of the teams as advisors back into the organization simulates one way in which organizations learn.” (*Id.*, [0031].) By separating and then reintegrating the members, the “organization can then benefit by having the individual members of the successful team teach their acquired skills to the organization.” (*Id.*) FIG. 2 illustrates the separation of an organization’s members into teams. (*Id.*, [0032].)

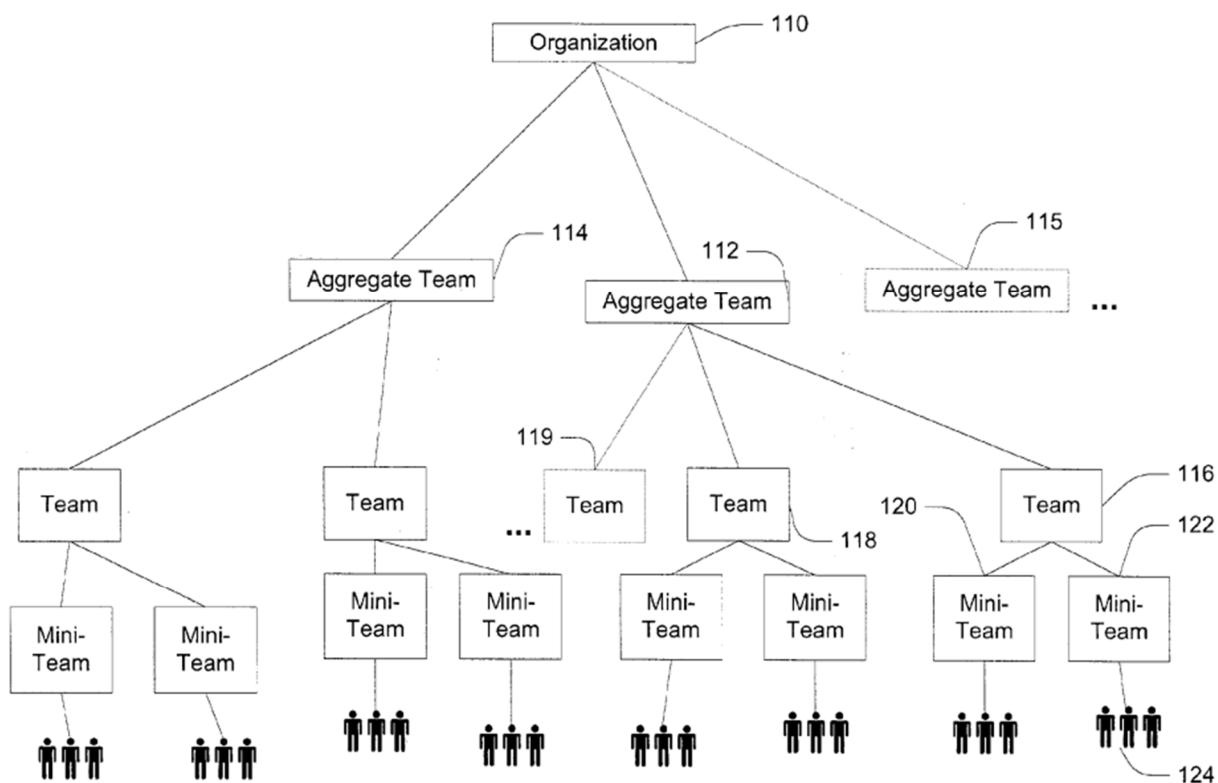


FIG. 2

(*Id.*, FIG. 2.) To learn new skills, each mini-team plays an educational game with other mini-teams from the same team.” (*Id.*, [0037]-[0039].)

IX. THE PRIOR ART DISCLOSES ALL OF THE FEATURES OF CLAIMS 1-5, 9, 11, 14-18, 22, AND 24 OF THE '825 PATENT

A. Feeney and Rogers Disclose or Suggest the Features of Claims 1-5, 9, 14-18, and 22

45. In my opinion, Feeney and Rogers disclose or suggest all of the features of claims 1-5, 9, 14-18, and 22.

1. **Claim 1**

i. **[1.pre] “A system for on-line academic competition, comprising:”**

46. It is my opinion that Feeney discloses or suggests the preamble of claim 1.

47. Feeney discloses a system 10 that includes a server 12 for managing a contest among players over the internet or web interface. (Ex. 1005, 3:5-15, 3:39-54, 4:14-28, FIG. 1.) As shown in Figure 1 (reproduced below), system 10 allows a plurality of players 31, 32, and 33 to participate in a contest over the internet using their respective devices 21-24. (*Id.*) Feeney thus discloses or suggests “**a system for on-line . . . competition.**”⁴

⁴ Claim language is bolded throughout.

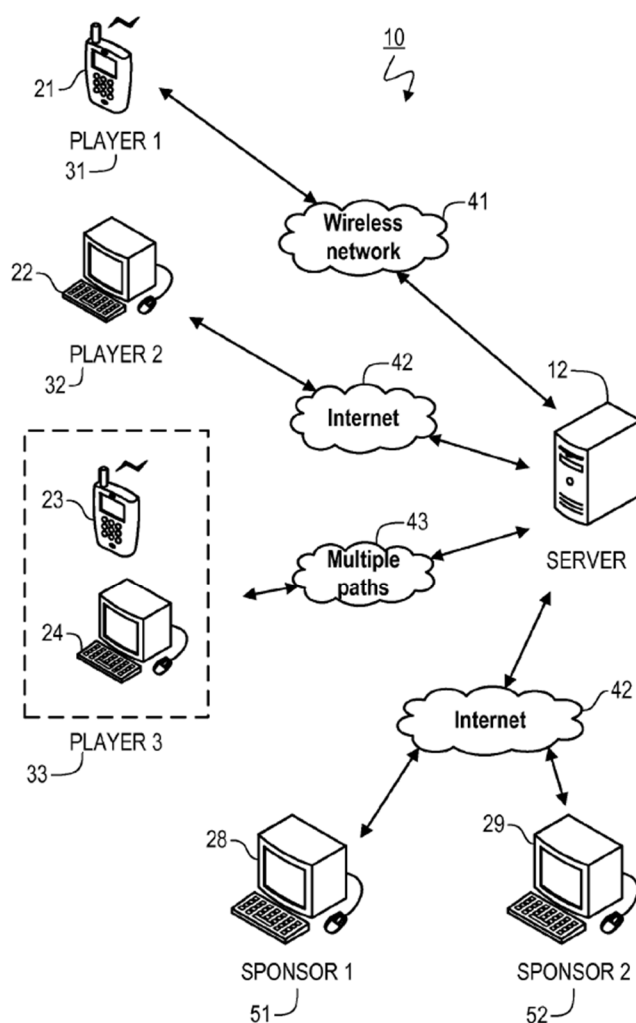


FIG. 1

(*Id.*, FIG. 1.)

48. Feeney further discloses that the contest can be “any kind of game in which the players compete against each other.” (*Id.*, 3:31-37.) Moreover, the contest can be in an academic context, such as during a school field trip. (*Id.*, 3:48-54,

25:42-49.) Thus, Feeney's system 10 is for an "on-line **academic** competition," as claimed.

49. Moreover, the term "**academic**" does not add any structural limitation to the claim; instead, "**academic**" competition merely provides the context in which the system defined by the rest of the claim may be used. Given that Feeney's system is for "any kind of game in which the players compete against each other," a POSITA would have understood that system 10 can be used for an "**academic**" contest. (*Id.*, 3:31-37.)

ii. [1.a] "**a database that stores test questions, team and individual contestant profiles, and test response statistics for the team and individual contestants; and**"

50. Feeney discloses or suggests this limitation. Feeney's system 10 includes a server 12, which further includes a contest administration system 80. (Ex. 1005, 4:57-64 ("FIG. 2 is a block diagram showing a contest administration system 80 implemented by server 12 according to a representative embodiment of the present invention. Ordinarily, system 80 will be implemented by one or more general-purpose processors within server 12, executing computer software, firmware or other computer-executable process steps, with the individual components of system 80 typically being written as software modules.").) Contest administration system 80 (shown below in Figure 2) includes a database

management component 82 that manages contest data information stored on storage device 83. (*Id.*, 4:65-5:6 (“One of the primary components of system 80 is database management component 82 which manages all of the player, sponsor and other information in connection with the contest. Such information preferably is stored in one or more data storage devices 83 (typically magnetic and/or optical drives). In the preferred embodiments, database management component 82 communicates with: a user interface component 84, a contest management component 86, player interfaces 88; and sponsor interfaces 89.”); FIG. 2.) Storage device 83 containing contest data constitutes “**a database**,” as claimed.⁵

⁵ Feeney also refers to storage device 83 as “database” 83. (*See, e.g.*, Ex. 1005, 5:15.)

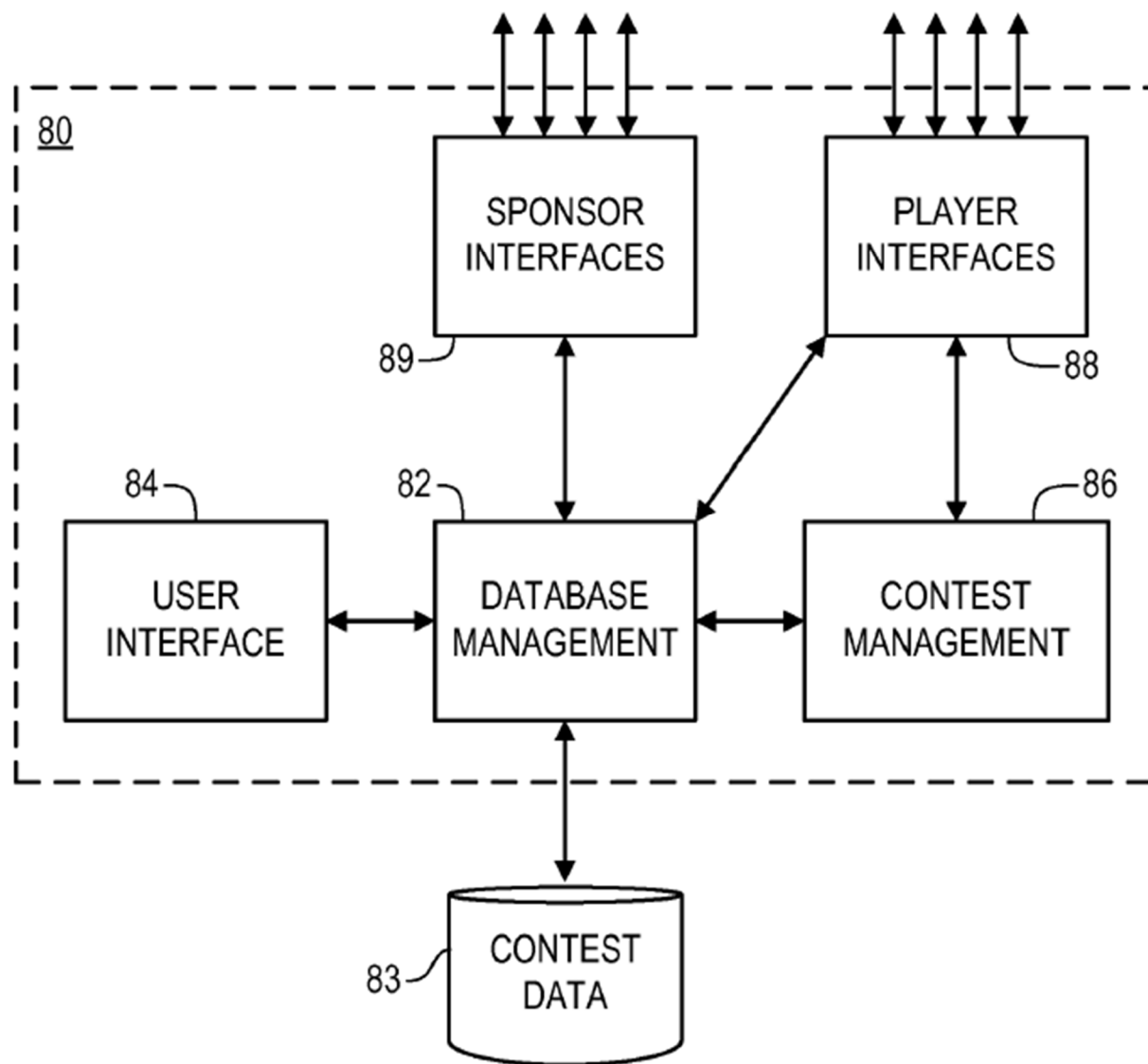


FIG. 2

(*Id.*, FIG. 2.)

51. The storage device 83 stores “contest questions and answers” because it stores “[a]ll content information” with respect to the contest. (*Id.*, 4:65-5:2, 5:7-16 (“The user interface component 84 enables individuals associated with the contest administrator to provide contest questions and answers and to generally manage the hosted contest(s). For example, such individuals preferably have the ability to modify rules regarding when questions are delivered to the players, to set the point value for each individual question, and/or to modify the parameters of the contest(s). All such configuration and content information preferably is stored into database 83 through database management component 82.”).) Device 83 further stores profile and other information pertaining to the individual player. (*Id.*, 5:25-37 (“The player interfaces 88 handles the details of the actual delivery of questions and/or problems to, and then receipt of responses from, the players. In addition, the player interfaces 88 preferably: receive player profile information for storage by database management component 82; retrieve from database management component 82 and then display to the respective players various player-specific contest-environment information and features and other information requested to be displayed by such players; and manage messaging between individual players. All profile and other information pertaining to the individual player preferably is stored into database 83 through database management component 82.”).) Thus, Feeney discloses “a

database that stores test questions, . . . and individual contestant profiles” as claimed. Feeney further discloses or suggests that storage device 83 stores **“team . . . profiles, and test response statistics for the team and individual contestants”** because, as explained below, each of this information is displayed on the contestant’s interface after retrieval from storage device 83.

52. Feeney discloses that server 12 manages the contest in real time and communicates with the devices 31-34 of the individual contestants. (*Id.*, 3:46-54 (“Generally speaking, a central server 12 manages and runs the contest in real time, communicating with a plurality of different player devices (e.g., devices 21-24). Each such player device 21-24 typically has a player associated with it (e.g., player 31 for device 21 and player 32 for device 22). In some cases, a single player (e.g., player 33) has two or more player devices (e.g., devices 23 and 24) that can be used to communicate with server 12 and, therefore, through which the player can participate in the contest.”).) Each contestant accesses the contest hosted by server 12 from a user interface 300 on their device. (*Id.*, 10:54-11:5 (“In certain embodiments of the invention, the individual players access information for main contest 102 through a Web interface using a generic Web browser. However, in the preferred embodiments the players also (or instead) can access such information through a separate, dedicated and/or stand-alone application that resides on their

networked devices 21-24. More preferably, such an application is implemented as a desktop widget or any other application that can be opened, used and then closed independently of the opening, use and closing of the player's generic Web browser. One example of such an application 160 is shown in FIG. 4. In the preferred embodiments, the functionality of application 160 is performed by a general-purpose processor within the subject player device 21, with such processor reading computer-executable process steps from a computer-readable storage medium (within or attached to the player device 21) and then executing such steps. When referring to a single player device (e.g., one of devices 21-24) herein, reference usually is made to device 21, for ease of reference only; such references are not intended to be limiting in any manner.”), 11:62-12:3 (“FIG. 5 illustrates the main components of the home page 320 for a user interface 300 (e.g., one example of user interface 165), according to a representative embodiment of the invention. In certain embodiments, user interface 300 is provided entirely by server 12 (e.g., through a Website), and in other embodiments it is provided by the player application 160 running on player device 21 that is in communication with the server 12.”).) User interface 300 can simply be a web page “provided entirely by server 12” or it can be a user interface that is part of a stand-alone application on the user’s device. (*Id.*, 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.)

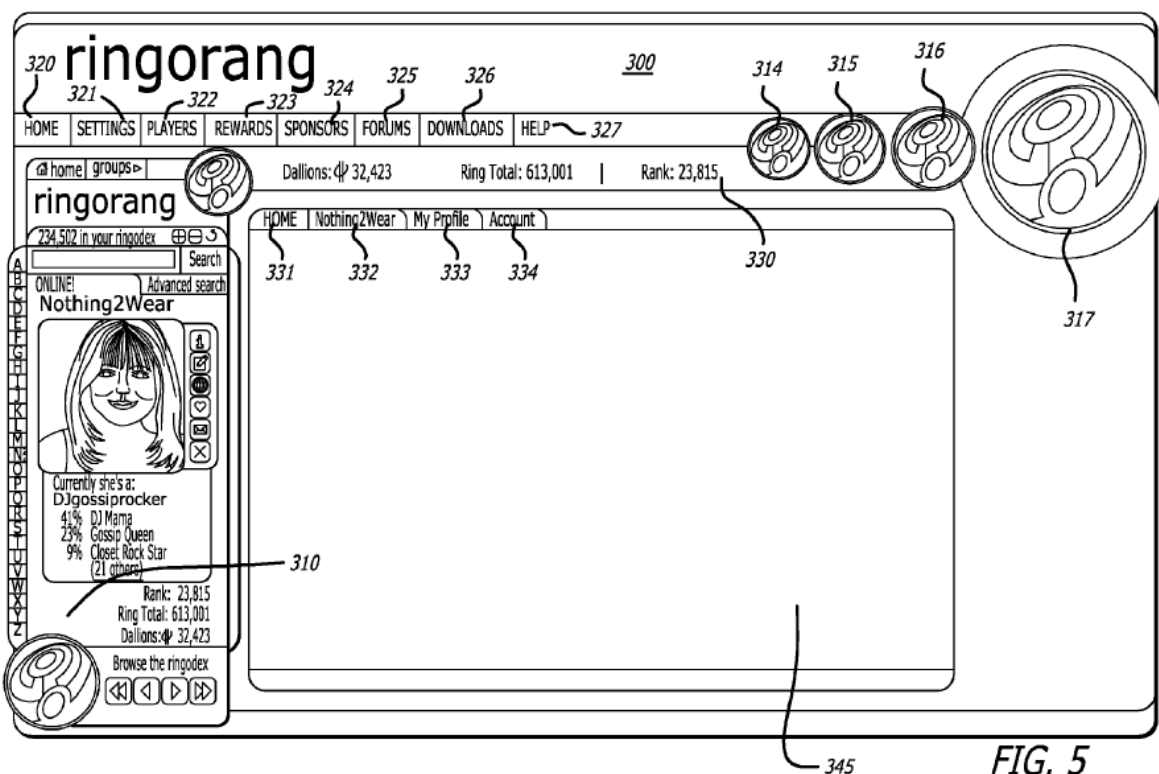


FIG. 5

(*Id.*, FIG. 5.)

53. The user interface 300 includes a “player-status summary area 330,” which displays statistics regarding the contestant (e.g., statistics regarding “the player’s performance in the contest” including total number of points won or held by the player.) (*Id.*, 12:55-13:24 (“Player-status summary area 330 preferably continuously displays certain pre-specified statistics regarding the player (particularly the player’s performance in the contest), irrespective of other content changes as a result of the player navigating around the interface 300. Depending

upon the particular embodiment, those pre-specified statistics can indicate the same parameters across all players, or the parameters that are displayed in summary area 330 can be customized by the individual player (e.g., through the SETTINGS page 321). In either event, examples of such parameters include: total number of points (called ‘Dallions’ in the present example) won or presently held; rank of a group or team (typically referred to as a ‘ring’ in the present example) to which the player belongs, e.g., relative to other groups or teams, respectively (called the player's ‘Ring Total’ in the present example); indications of the player's own overall rank or the player's rank within a particular contest, competition or tournament (identified simply as ‘Rank’ in the present example); aggregate number of points of everyone within the player's ring (not shown in the present example); . . .”), FIG. 5.) The player-status summary area 330 also displays the “rank of a group or team . . . to which the player belongs” and the “aggregate number of points of everyone within the player’s [team].”⁶ (*Id.*) Thus, user interface 300 displays the claimed “**test response statistics for the team and individual contestants.**” Interface 300 also displays a list of the team members and their summary statistics upon clicking of the View Ring button 413 in Ringodex 380 (*id.*, 17:41-53), which can be part of the user

⁶ Feeney refers to “team” as a “ring.” (*Id.*, 12:66-67.)

interface 300. (*Id.*, 14:46-53; FIGs. 5, 6.) Thus, interface 300 also displays the claimed “**team . . . profile**” (e.g., the list of team members and their summary statistics) when requested by a player.

54. A POSITA would have understood that the above-identified information displayed by interface 300 is stored in database 83 because device 83 stores “[a]ll profile and other information pertaining to the individual player,” including “various player-specific contest-environment information and features and other information requested to be displayed by such players.” (*Id.*, 5:25-37.) Indeed, the user interface 300 can be “provided entirely by server 12” and therefore, a POSITA would understand that the above-identified information would have been stored in the server 12’s local storage (i.e., database 83) and retrieved upon a player’s request through user interface 300. (*Id.*, 11:47-53 (request to retrieve player information through user interface triggers an “immediate request for the desired information from server 12.”).)

iii. **[1.b] “a processor programmed to interact with the database and with individual contestant processing devices to perform the steps of:”**

55. Feeney discloses this limitation. Server 12 executes a contest administration system 80, which is implemented by one or more processors. (Ex. 1005, 4:57-64.) As shown in Figure 2, system 80 (and hence, the processor

implementing system 80) interacts with storage device 83 (“**database**”). (*Id.*, 4:65-5:2, 5:34-36 (“All profile and other information pertaining to the individual player preferably is stored into database 83 through database management component 82.”).) Thus, Feeney discloses that the system includes “**a processor programmed to interact with the database.**”

56. The server 12 communicates with player devices 21-24 (“individual contestant processing devices”) (*id.*, 3:46-48) through the player interface 88 of contest administration system 80. (*Id.*, 5:25-37, FIG. 2.) Thus, Feeney also discloses that the processor implementing system 80 interacts “**with individual contestant processing devices.**” As further discussed below with reference to limitations [1.c]-[1.g], system 80 enables certain steps, which are executed by the processor of system 80. (*Id.*, 4:57-64.)

iv. **[1.c] “enabling the creation of teams of individual contestants for participation in an academic competition;”**

57. Feeney discloses this limitation. Feeney discloses facilitating teams of individual players to compete in the contest. (Ex. 1005, 9:7-11 (“Another aspect of the contest structures according to the preferred embodiments of the present invention is the facilitation of groups of players (e.g., groups 118 and 119, shown in FIG. 3) for different purposes.”), 9:26-29 (“Other kinds of groups include various

types of rings, such as the ‘team-rings’ and ‘power-rings’ discussed below, in which the players may participate for the purpose of competing during a contest.”.) For example, “players can . . . compete as part of a team (sometimes referred to herein as a ‘team-ring’) in which the rings compete against each other.” (*Id.*, 21:51-59.) These rings (i.e., teams) can be created by the players themselves. (*Id.*, 21:63-22:13 (“The way(s) in which rings are formed can vary across different embodiments. In one, a player simply decides to start and manage a ring (i.e., thereby becoming a RingMaster) and then goes about selecting players to join his or her ring, or attempting to entice players to join the ring (such players sometimes being referred to herein as RingMates or simply Mates). In that regard, the RingMaster preferably can, e.g., search through the universe of contest players, e.g., using any of the techniques and/or search criteria discussed above. However, in certain embodiments a player must first become qualified in order to become a RingMaster, e.g., by reaching a specified performance level. For instance, a contest might be structured such that each RingMaster must have: won a previous contest, ranked above a certain threshold in a contest, earned a specified minimum number of Dallions based on his or her own responses, and/or any combination of the foregoing or any other criteria. Once qualified in accordance with the applicable criteria, the RingMaster can then begin to construct a ring, e.g. as described above.”).)

58. To create a team, a player can “search through the universe of contest players” and select players to join his/her ring. (*Id.*) For example, the player can search for other players through a basic search (window 420) or an advanced search 425. (*Id.*, 18:28-46 (“With respect to the latter, clicking on Advanced tab 425 preferably unfolds a ‘drawer’ giving the player options for entering more specific or targeted search criteria, such as by permitting searching across any combination of a variety of different parameters. In the preferred embodiments, such parameters can include any or all of: game performance statistics (e.g., rank, Dallions or points earned, accuracy percentage, accuracy percentage by category or accuracy percentage within a specified time period); geographical parameters (e.g., location of the players by city or ZIP code); chosen sponsor badges; identifier components (i.e., the subjects in which a player excels); ring or team membership; or any character string, word or keyword in a player’s profile.”), 18:47-19:14, FIGs. 6; 7). This search functionality is described with reference to Ringodex 380 in Figures 6 and 7, which can be implemented as part of user interface 300 as a webpage. (*Id.*, 14:46-52.⁷)

⁷ Ringodex 380 and its corresponding search functionality is discussed further below in Section IX.A.1.v.

59. A POSITA would have understood that this search functionality is enabled by server 12 (and by extension the processor implementing contest administration system 80, *supra* Section IX.A.1.iii), because the user interface 300 can be “provided entirely by server 12.” (Ex. 1005, 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a player interface 88 that “display[s] to the respective players . . . information requested to be displayed by such players,” including profile information of the players stored in the storage device 83. (*Id.*, 5:25-37, 15:1-5 (“all of the profile cards typically will be maintained by server 12”).)

60. Moreover, a POSITA would have understood that Feeney’s reference to facilitating groups of players to compete (*id.*, 9:5-29) refers to system 80 enabling the creation of teams because groups of players cannot compete unless the system allows team creation in the first place. For example, a POSITA would have understood that such team creation is executed by a “contest administrator” through user interface component 84, which allows the “contest administrator . . . to generally manage the hosted contest(s).” (*Id.*, 5:7-16.) As I described above in Section VIII.E, Panetta is evidence that enabling team creation for an academic competition by an administrator (e.g., a teacher) was well-known.

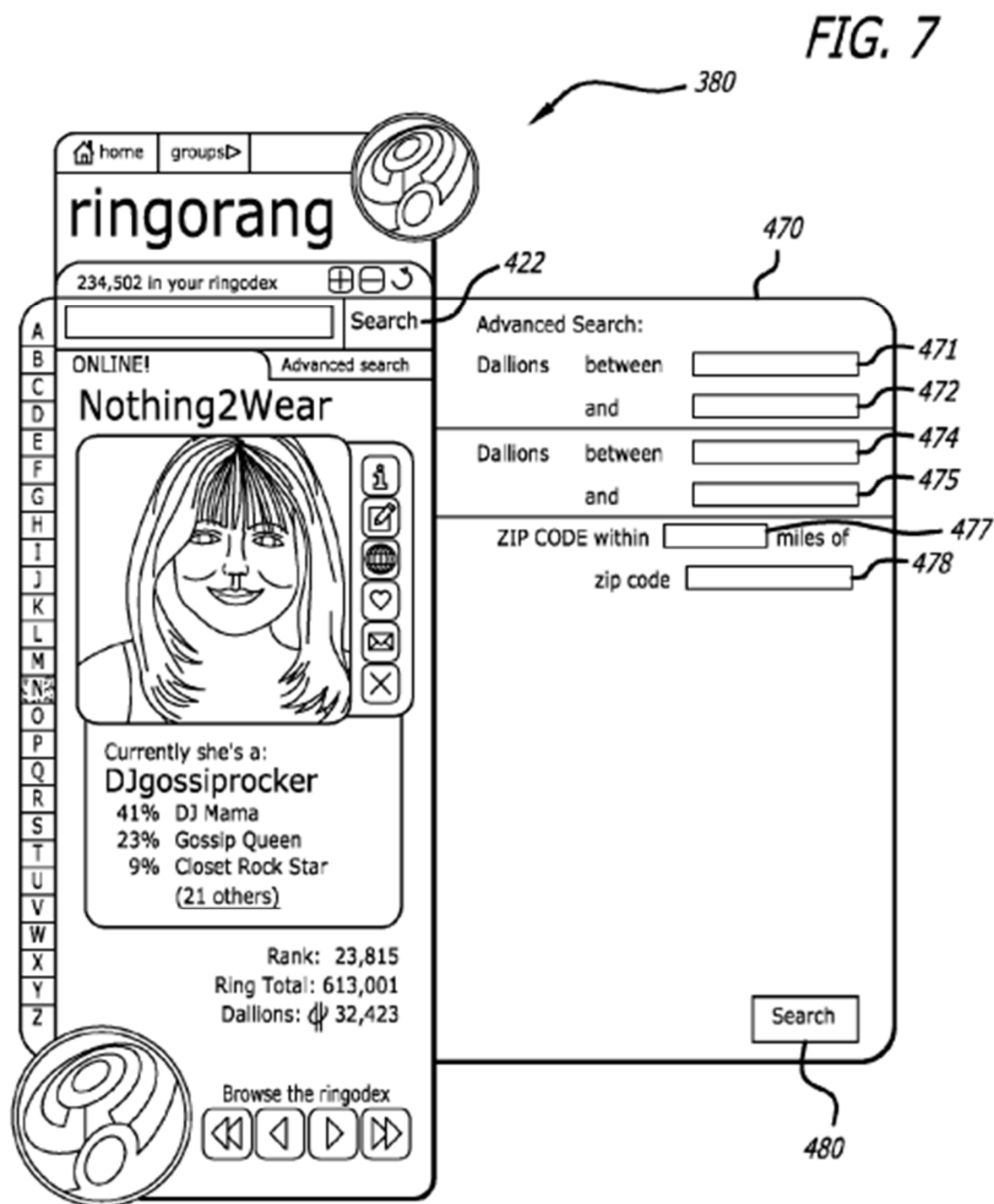
61. Therefore, the processor of system 80 enables creation of teams for participation in the contest, which can be an academic competition (as discussed above in Section IX.A.1.i). Feeney thus discloses or suggests **“enabling the creation of teams of individual contestants for participation in an academic competition.”**

- v. [1.d] **“enabling a user, through a user interface connected to said database, to perform at least one of the following: (1) create a league of teams and a cycle of academic competition amongst the league of teams, (2) search for and select at least one team for participation in an inter-team academic competition, and (3) divide a team into multiple teams for an intra-team academic competition;”**

62. Feeney discloses limitation [1.d] by disclosing **“enabling a user, through a user interface connected to said database, to . . . 2) search for and select at least one team for participation in an inter-team academic competition.”**⁸ As explained below, system 80 (and thus the **“processor”**) enables a player (**“user”**) to search for and select a team through a user interface 300 (**“user interface”**), where the user interface 300 is connected to storage device 83 (**“said database”**).

⁸ Limitation [1.d] recites “at least one of the following” so limitations (1) and (3) are optional.

63. Figure 7 (shown below) illustrates the Ringodex 380, which is an interface that is part of the user interface 300. (Ex. 1005, 14:50-54.)



(*Id.*, FIG. 7.)

64. In the Ringodex 380, a player can click the “Advanced tab 425” (*id.*, 18:28-38) to perform a search for a ring or team (*id.*, 18:45, 18:60-63 (“For example, after the search, the player preferably can browse through the search results using browsing controls 402.”).) The search results include profile cards for players meeting the search criteria. (*Id.*, 19:1-14 (“Returning to FIG. 7, while browsing through the search results (resulting from a basic or advanced search), the player can click on the ‘minus’ sign 431 to remove the present profile card from the search results. At any time, the player preferably has the ability to save the search results as a group or a set of profile cards, e.g., designating any desired label for such group or set. The player preferably also can add the currently displayed profile card to an existing grouping by clicking on the ‘plus’ sign 432. Once the player is finished with the present search results, he or she can click on the ‘refresh’ button 433 in order to clear the search results and revert the Ringodex 380 to the default, i.e., all player profile cards in the contest universe or, in certain embodiments, to the state of the Ringodex 380 immediately prior to the current search.”).) Clicking on any search result “causes the corresponding profile card to be displayed in Ringodex 380.” (*Id.*, 19:28-38 (“In addition to (or instead of) the search results being displayed through the Ringodex 380, in certain embodiments or in certain cases (e.g., depending upon

player settings) the search results are displayed in the main content window 345 (or some other interface that is larger than Ringodex 380), e.g., with profile pictures and usernames. Clicking on any given entry in such search results preferably causes the corresponding profile card to be displayed by the Ringodex 380 or, in alternate cases or embodiments, causes the entire profile card to be displayed within the main content window 345 (or such other larger interface).”) The player can view the selected profile card and click the Send Message button 415 to request to join the player’s ring (i.e., team). (*Id.*, 18:9-19 (“Send Message button 415 allows the player to send a message to the player whose profile card currently is being viewed or, in certain embodiments, to all members of the currently selected group. In the preferred embodiments, the player has the ability to compose a free-form message and/or to select one or more messages from a set of predefined messages (such as: an invitation to join the player's ring; a request to join the player's ring; a request to form a ring; or a challenge that requests the other player to compete, e.g., one-on-one, against the player).”) A POSITA would understand that the above functionality enables a player to: (a) search for a team (e.g., by specifying the “ring or team membership”), (b) view player profile cards of players in that team, and (c) contact a specific player to request to join their team. The act of requesting to join a team constitutes selecting **“at least one team for participation in an inter-team**

academic competition.” Thus, Feeney discloses “enabling a user, through a user interface . . . to perform at least one of the following . . . (2) search for and select at least one team for participation in an inter-team academic competition.”

65. Feeney also discloses the same feature in a slightly different manner. For example, say a player is looking to join a team but doesn’t know which team he/she wants to join. The player can run a search for players (e.g., players in a certain geographic area), browse their profiles and send a message to a selected player to join their team, as discussed above. (*Id.*, 18:34-46 (“With respect to the latter, clicking on Advanced tab 425 preferably unfolds a ‘drawer’ giving the player options for entering more specific or targeted search criteria, such as by permitting searching across any combination of a variety of different parameters. In the preferred embodiments, such parameters can include any or all of: game performance statistics (e.g., rank, Dallions or points earned, accuracy percentage, accuracy percentage by category or accuracy percentage within a specified time period); geographical parameters (e.g., location of the players by city or ZIP code); chosen sponsor badges; identifier components (i.e., the subjects in which a player excels); ring or team membership; or any character string, word or keyword in a player’s profile.”), 18:9-19.) Thus, Feeney enables searching for and selecting a team to join, as recited in claim limitation [1.d].

66. Feeney further discloses that user interface 300 is “**connected to said database**” because user interface 300 displays the player profile cards that are saved in storage device 83 (“**said database**”). (*Id.*, 5:25-37.) And it is the processor of system 80 in server 12 that enables this feature. (*Id.*, 15:1-10; *supra* Section IX.A.1.iv.)

- vi. [1.e] “**presenting a series of test questions to the contestant processing devices of the individual contestants of competing teams for response in a time frame allocated for the academic competition;**”

67. Feeney discloses this limitation. Feeney discloses that the contests “typically involve[es] questions to be answered or other problems to be solved.” (Ex. 1005, 20:2-8.) As an example, “a stream of problems . . . is provided by server 12” to the players as part of a “one-month general knowledge contest.” (*Id.*, 20:18-25.) These questions/problems can be delivered “simultaneously” to multiple participating players “as described in the ’179 Application” (*id.*, 20:47-49), which is “incorporated by reference [in Feeney] . . . in full.” (*Id.*, 2:66-3:6.) The ’179 application describes simultaneous delivery of a number of problems, which may include “multiple-choice” or other types of questions, to a user interface (illustrated below) of each player device. (Ex. 1008, ¶¶ [68] (“Preferably, the contest is played over an extended period of time, such as anywhere from several days to a month, or

even longer. As discussed in more detail below, the contest involves a number of problems, which may include multiple-choice or other types of questions. Preferably, each problem is made available to ***all*** of the players at substantially the same time, and multiple problems are made available each day of the contest. In order to address the situation that everyone will not necessarily be able to play at the same time, more problems preferably are made available than the number of problems that each player is permitted to respond to, under the rules of the contest.”) (emphasis added), [77] (“In step 137, the problem is presented substantially simultaneously to all of the participating players. In the present embodiment, participating players are required to answer an ordinary problem (special problems are discussed below) within 30 seconds, or else are scored as getting the problem incorrect. For that reason, and in order to prevent any unfair advantages, the problem preferably is presented within a 3-second window to all or substantially all of the participating players under normal circumstances. Of course, player device failures and other physical limitations at least sometimes will preclude delivery within such a 3-second window to 100% of the player devices.”), [79] (“An exemplary user interface 190 providing such a problem is illustrated in FIG. 8. As shown, user interface 190 includes a multiple-choice question 191, a plurality of potential answers 193, and a count-down timer 195 which indicates the time remaining in

which to provide a response. Because a timer internal to application 80 preferably is used, the participant can be given the full response time (e.g., 30 seconds) from the time that the problem initially is delivered (or displayed), even if there are slight differences (e.g., a second or two) among the various player devices as to when the problem is delivered in absolute time.”), FIG. 8.)

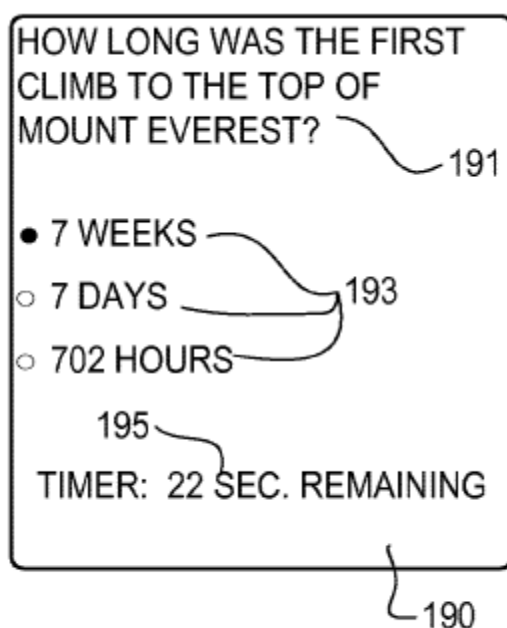


FIG. 8

(*Id.*, FIG. 8.)

68. In view of Feeney’s incorporation of the ’179 Application, Feeney discloses that the problems are delivered to the user interface 300 of each player device (e.g., 21-24). This is further confirmed by Feeney’s disclosure that multiple questions and/or problems can be delivered on the user interface 300, e.g., by

incorporating the '179 applications' alert-based client application. (Ex. 1005, 13:62-14:6 (“Depending upon the particular contest being implemented, an additional player application, such as the alert-based client discussed in the '179 Application, sometimes is provided on the player device 21, e.g., for the purpose of delivering questions and/or problems to the various players. Otherwise, the players generally can access contest information, make strategic decisions, change settings, contact other players and the like through user interface 300. In other embodiments, the alert-based client discussed in the '179 Application is incorporated into application 160 and/or user interface 300.”).) Feeney thus discloses or suggests “**presenting a series of test questions to the contestant processing devices of the individual contestants.**”

69. As noted above, Feeney defined a time frame (e.g., 1-month) for the contest. (*Id.*, 20:18-25, 24:14-15 (“[A]fter a problem has been delivered, the players are given indications as to how much time is left to respond.”).) Feeney thus discloses or suggests that the questions are presented “**for response in a time frame allocated for the academic competition.**”⁹ To the extent Patent Owner incorrectly

⁹ As discussed above with reference to limitation [1.pre], the term “academic competition” cannot patentably distinguish Feeney from claim 1.

contends that Feeney does not disclose the “**time frame allocated for the academic competition,**” then Feeney in combination with Rogers discloses or suggests including a timer mechanism in Feeney that shows the total time remaining to answer the entire series of questions. (*Infra* Section IX.A.1.vii.) Such a timer mechanism discloses a “**time frame allocated for the academic competition.**”

70. Feeney further discloses that the individual players “can compete as part of a team” (Ex. 1005, 21:51-62), where the teams “receive questions as a group” (*id.*, 22:15-22 (“In certain embodiments (e.g., the team-ring embodiments), the rings receive questions as a group and thus have the chance to earn (and lose) Dallions as a group (e.g., based on average accuracy percentage across the ring). In certain embodiments, the RingMaster can decide how long the Ring will last before being disbanded (e.g., 2 days or 1 week) and/or what the accuracy percentage should be (ex. 80%, 10%).”). Even when receiving questions as a team, a POSITA would have understood that the questions are delivered to *each* player device in a given team for the following reasons. First, Feeney does not require that the players in a team use a single device to answer questions. Rather, each player is described having their own player device. (*Id.*, 3:39-54 (“Many of the techniques of the present invention contemplate participation in a contest (or other kind of game) by a large number of geographically dispersed individuals or devices (e.g., spread across different cities,

states or even countries). FIG. 1 illustrates an overview of a system 10 for achieving this goal, according to a representative embodiment of the present invention. Generally speaking, a central server 12 manages and runs the contest in real time, communicating with a plurality of different player devices (e.g., devices 21-24). Each such player device 21-24 typically has a player associated with it (e.g., player 31 for device 21 and player 32 for device 22). In some cases, a single player (e.g., player 33) has two or more player devices (e.g., devices 23 and 24) that can be used to communicate with server 12 and, therefore, through which the player can participate in the contest.”), 3:64-4:2 (“It is noted that although only six player devices 21-24 are illustrated in FIG. 1, this is for ease of illustration only. Typically, there will be many more player devices that are used to participate in the contest, such as more than 50, 100, 500, 1,000 or even 10,000 such devices (as well as a similar number of players).”), 4:6-13 (“Each of the players 31-33 preferably will have pre-registered with server 12 for the contest, and may also have designated the device(s) which such player 31-33 will be using to participate in the contest. In the preferred embodiments, the players 31-33 will have installed a contest interface application on the devices 21-24 that they will be using, an example of such an interface application being described in greater detail below.”).) Second, Feeney explains that when a team receives questions as a group, the team earns points

(referred to as “Dallions”) “based on average accuracy percentage across the ring.” (*Id.*, 22:15-18; *see also id.*, 20:29-32.) An average accuracy percentage ***across*** the ring means an average of the accuracy of the answers by the players of the ring, which indicates that each player in the ring provides an answer, and their individual accuracies are tallied and averaged to determine the average accuracy percentage across the ring. Third, Feeney explains that the summary area 330 in user interface 300 shows the “aggregate number of points of everyone within the player’s ring.” (*Id.*, 13:6-7.) This again indicates that ***each*** member of a ring answers questions and their points are aggregated by the system. For at least the above reasons, Feeney further discloses “**presenting a series of test questions to the contestant processing devices of the individual contestants of competing teams.**”

71. A POSITA would have understood that the functionality of limitation [1.e] is provided by server 12 (and by extension the processor implementing contest administration system 80, *supra* Section IX.A.1.iii) because the user interface 300 can be “provided entirely by server 12.” (Ex. 1005, 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a player interface 88 that “handles the details of the actual delivery of questions and/or problems” to the players. (*Id.*, 5:25-37.)

- vii. [1.f] “providing a real time scoreboard with time clock to each contestant processing device that displays an individual contestant’s progress with respect to both the time frame for answering questions and questions answered correctly while answering the series of questions during an academic competition, where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team; and”

72. This limitation is analyzed in two parts. I first explain how Feeney alone discloses or suggests this limitation. I then explain how Feeney in combination with Rogers discloses or suggests this limitation.

(a) Feeney alone discloses or suggests limitation [1.f] under Patent Owner’s interpretation

73. Feeney discloses that the interface 300 for each player device includes a player-status summary area 330 for “continuously” displaying statistics regarding a player or the player’s team’s performance in the contest (e.g., team rank, player’s own rank, total number of points won, etc.). (Ex. 1005, 12:55-13:24.) The statistics are updated. (*Id.*, 21:42-45 (“In any event, such percentage(s) or score(s) preferably are updated on a regular basis and provided to the players through one or more user interfaces (e.g., such as interface 300, 310 or 380).”).) Thus, Feeney discloses “providing a real time scoreboard . . . to each contestant device.” Feeney’s description of interface 300 applies to *each* player device. (Ex. 1005, 4:9-14 (“In

the preferred embodiments, the players 31-33 will have installed a contest interface application on the devices 21-24 that they will be using, an example of such an interface application being described in greater detail below.”.) That is, the description of interface 300 is generic and applies across other player devices as well. While Feeney describes interface 300 with respect to player device 21 (*id.*, 11:66-12:3), it states that the reference to device 21 refers to each player device 21-24 (*id.*, 11:2-5).

74. Feeney further discloses that “after a problem has been delivered, the players are given indications as to how much time is left to respond.” (*Id.*, 24:14-15.) Such indication can be in the form of a “clock.” (*Id.*, 24:14-26 (“Preferably, after a problem has been delivered, the players are given indications as to how much time is left to respond. Such indications may be in the form of a digital countdown clock, an analog clock where the time is up when an indicator hand (e.g., configured as the contest's logo) makes a full rotation, as a bar that changes color from left to right or bottom to top, or anything similar. Also, rather than indicating the amount of time remaining, the indication may be the amount of Dallions that will be won (e.g., declining over time) if the player submits a correct response at that point. In certain embodiments, after each problem the players are able to see who was the fastest to answer it correctly, e.g., with an ordered list of the fastest players and their

times.”).) A POSITA would have understood that such a clock would have been provided in the user interface 300 because, in Feeney, “game-based information and functionality is available through a single user interface 300.” (*Id.*, 13:61-63.) A POSITA would have been motivated to include the clock in the player-status summary area 330 because area 330 displays other performance indicia for the player (e.g., score, rank) that is updated on a regular basis, as discussed above. Providing the clock in the player-status summary area 330 would have been desirable because it would have allowed a player to visually monitor their performance (e.g., score and time remaining) using indicators provided in one place without having to flip between multiple interfaces . (*Id.*, 13:61-63 (“game-based information and functionality is available through a *single* user interface 300”) (emphasis added).) Providing such a clock in area 330 would also have been feasible in Feeney because Feeney provides a settings page 321 through which the user can customize the parameters displayed in area 330. (*Id.*, 12:55-63.) Thus, Feeney discloses or at least suggests “**providing a real time scoreboard with time clock to each contestant processing device.**”

75. Feeney further discloses that “after a problem has been delivered, the players are given indications as to how much time is left to respond.” (*Id.*, 24:14-15.) Under an interpretation of [1.f] under which the claim is satisfied by indicating

how much time is remaining to answer a single individual question and the claim does not require indicating how much time is remaining or how much of an allotted time has elapsed for the *entire* series of questions in a contest, Feeney discloses displaying “**an individual contestant’s progress with respect to [] the time frame for answering questions.**” I disagree with this interpretation, but to the extent it is adopted, Feeney discloses this limitation.

76. Feeney discloses displaying performance statistics, including scores for answering questions correctly. For example, Feeney discloses that correctly answering questions contributes to the number of points (called “Dallions”) earned by the player during the contest. (Ex. 1005, 12:63-13:24, 20:29-32 (“While the various players are participating in different contests, the same kinds of points (typically called ‘Dallions’ herein) preferably are earned across all contests and, in some cases, are capable of being earned independent of any contest.”), 22:15-18, 22:56-63 (“More generally, ‘bidder’ questions may be made available periodically or on a pseudorandom basis, giving all of the players the opportunity to bid a number of Dallions before they answer (e.g., double or nothing). In certain embodiments, this feature is only made available to players that have achieved some milestone (such as reaching a specified number of Dallions or having answered a specified number of problems).”), 23:3-5 (“As indicated above, different problems might have

different levels of difficulty, with easier problems rewarding correct responses with fewer Dallions than medium or difficult ones.”), 23:65-24:2 (“As with the contest described in the '179 Application, the number of Dallions awarded for answering a problem correctly preferably declines the time, and no Dallions are awarded for any response submitted after a maximum specified time period.”).) The summary area 330 displays the player’s score (e.g., number of accumulated Dallions) during the contest. (*Id.*, 12:55-13:24, FIG. 5.) Feeney states that the “scores” are “updated on a regular basis. (*Id.*, 21:42-45.) Feeney thus discloses or suggests that the summary area 330 **“displays an individual contestant’s progress with respect to . . . questions answered correctly while answering the series of questions during an academic competition.”** The number of Dallions earned by the player is an **“individual score of the individual contestant.”** Feeney, therefore, also discloses **“where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team.”**

77. Feeney discloses display of **“an individual contestant’s progress with respect to...questions answered correctly”** in additional ways. For example, Feeney discloses displaying the player’s progress with concentric rings that light up as the players answer problems correctly. (Ex. 1005, 24:64-25:7 (“In one contest

(or portion of a contest), the player's progress is visually displayed through a series of concentric rings. Correctly answering a first problem lights up the outer ring, correctly answering the second problem lights up the first inner ring, and if the player correctly answers the third problem in a row then the most inner ring lights up, e.g., placing the player's symbol in the Center Dot/Ring, which earns the player bonus Dallions (e.g., triple the accumulated Dallions) plus a chance to earn a bonus prize if the fourth and final problem is answered both correctly in the shortest amount of time among all then-remaining players.”.) Correctly answering a first problem causes an outer ring to light up, while correctly answering a second problem causes an inner ring to light up. (*Id.*) In another example, Feeney discloses displaying player icons that move along a track based on whether the players answers problems correctly or incorrectly. (*Id.*, 25:28-34 (“Another example is the carnival-style rangle, in which icons representing the players move along a track, advancing for each problem answered correctly (e.g., with the distance being based on difficulty of the problem and/or speed in answering it correctly) and potentially moving backward for each problem answered incorrectly, and the first icon to reach the finish line is the winner.”).) Again, a POSITA would have understood that each of the above-identified visuals would have been provided in the user interface 300 because, in Feeney, “game-based information and functionality is available through

a single user interface 300.” (*Id.*, 13:61-63.) And they would have been provided more specifically in the summary area 330, for reasons discussed above.

(b) Feeney in combination with Rogers discloses or suggests limitation [1.f] under Petitioner’s interpretation

78. As discussed above, Feeney discloses a time clock and discloses limitation [1.f] under one interpretation of [1.f] (*supra* Section VII). Feeney expressly discloses indicators that show “how much time is left to respond,” such as a digital countdown clock or an analog clock where the time is up when an indicator hand makes a full rotation. (Ex. 1005, 24:14-26; *supra* Section IX.A.1.vii.(a).) Feeney does not expressly state whether the time “left to respond” refers to the time remaining for an individual question or the time remaining for the entire series of questions in a contest. Feeney also discloses or suggests that the time clock is located within the user interface 300 (*supra* Section IX.A.1.vii.(a)) but does not expressly state where the time clock is positioned within the user interface 300. Rogers expressly discloses such aspects.

79. Rogers discloses “an online test platform” (Ex. 1006, 7:60-61) that “may facilitate the development, delivery, and management of educational tests” for “students, teachers, proctors, and administrators.” (*Id.*, 7:22-25.) Rogers discloses providing a test with a series of questions to be answered within a certain time. (*Id.*,

19:15-20 (“FIG. 8 depicts the introductory screen. The introductory screen indicates the number of questions to answer 802, the number of minutes 804, and progress indicators 808 for time used and questions completed. Note that the progress indicators 808 are present and active for all subsequent test screens.”), FIG. 8.) FIG. 8 illustrates an introductory screen of the test:

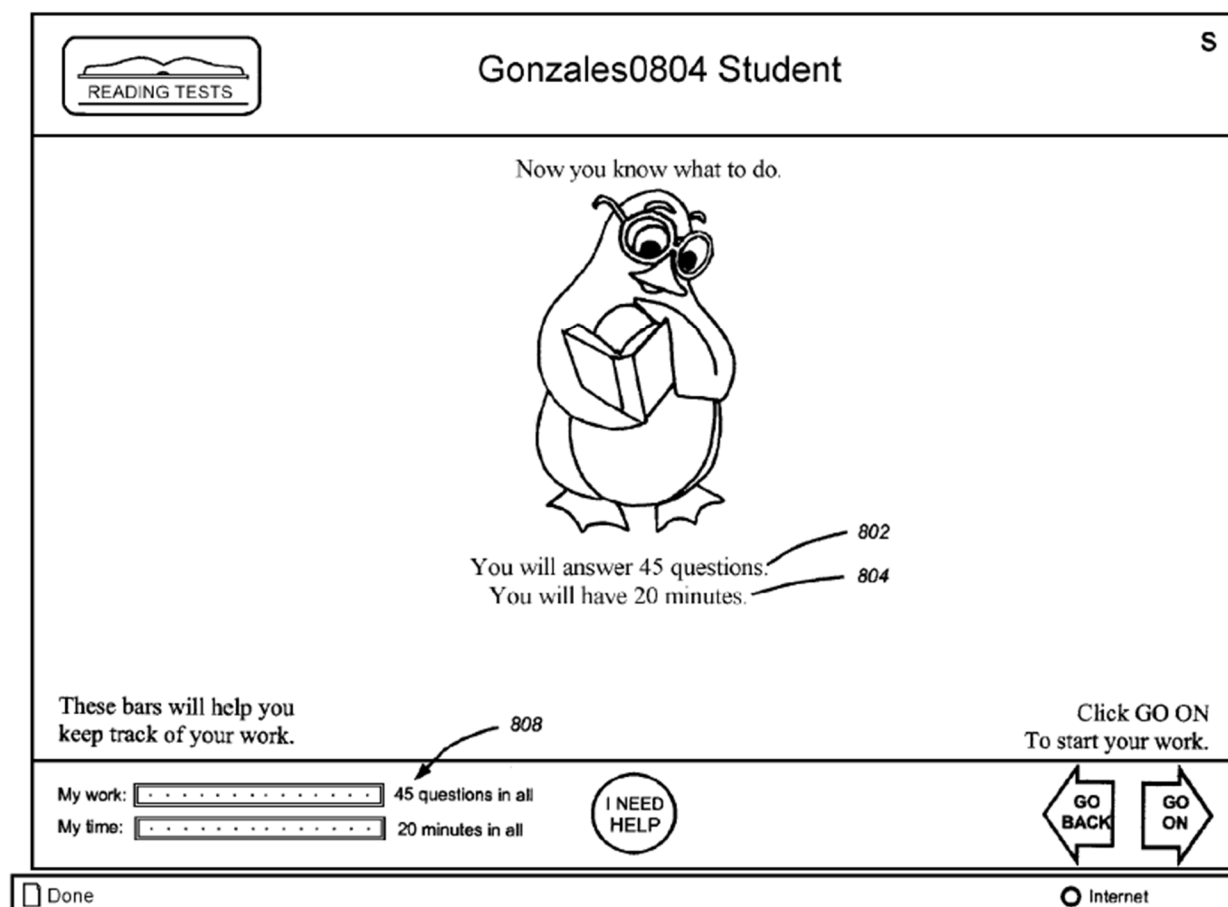


FIG. 8

(Id.)

80. FIG. 9 illustrates a test screen:

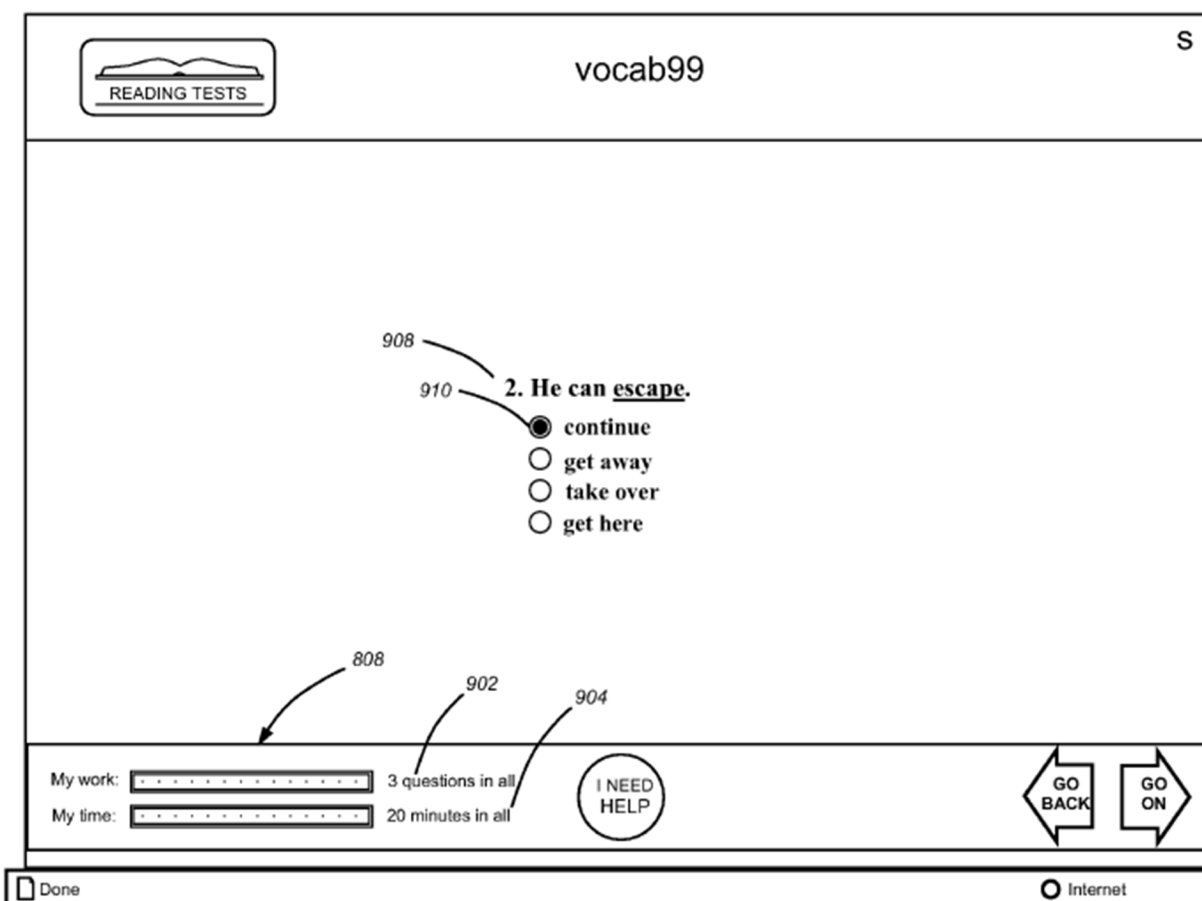


FIG. 9

(*Id.*, FIG. 9, 19:23-24.)

81. Figure 9 illustrates that as the user progresses through the test, the progress indicators 808 indicate progress towards the total count of questions 902 and the total time allowed 904. (*Id.*, 19:56-20:15 (“The test screen may display a status indicator such as a completion status bar that provides indication of relative progress toward completion of the test questions. At least a portion of the indicator may change to a different color based on a ratio of the number of answers provided

to the total number to be presented in the session. The test screen may also provide a time indicator, representing a ratio of time used in the session to a total time allowed to complete the session. In an example, FIG. 9 shows a question progress bar indicating that approximately a very small number of the questions to be presented have been completed. FIG. 9 also shows a time indicator bar indicating the amount of time used of the total of 30 minutes allowed to complete the session. Other indication forms such as a pie chart, a count, a clock, a digital timer, and the like may alternatively represent the test completion status and the time used status. The test question and time used indicators may be useful to a user in allocating test time to questions. It may also be useful to indicate to users how many more questions they have to answer, including questions they may have chosen to initially skip. The progress indicators 808 may include a total count of questions 902 and a total time allowed 904. These may facilitate a user assessing how many of the total questions 902 have been answered by comparing the amount of the progress bar 808 consumed to the total number of questions. The time progress bar 808 may facilitate similar user assessment of the time of the test.”.) Examples of indications include a progress bar, a pie chart, a count, a clock, and a digital timer. (*Id.*) For example, a user can assess how many of the total questions have been answered and how much time has been used up based on the amount of the progress bar that is filled in. (*Id.*)

Figures 10-12 illustrate how the progress indicators 808 indicate progression through the tests. (*Id.*, 20:42-21:16.)

82. Rogers thus expressly discloses a **“real-time scoreboard with a time clock”** that shows **“an individual contestant’s progress with respect to . . . the time frame for answering questions . . . while answering the series of questions during an academic competition.”** Rogers does so under the interpretation I set forth above in Section VIII because it indicates both how much time has elapsed and how much of the allotted time is remaining to answer the entire series of questions.

83. A POSITA would have been motivated to combine the teachings of Feeney and Rogers to apply Rogers’s timed tests and progress indicators to Feeney’s user interface 300 so that the user interface 300 includes a time clock that shows how much time has elapsed and how much allotted time is remaining to answer the stream of multiple problems (e.g., multiple-choice questions) in Feeney. A POSITA would have looked to Rogers to refine Feeney’s interface because both Rogers and Feeney disclose delivery of problems for a user to answer over a network, and a user interface for displaying indicia (e.g., time remaining) for a test or quiz. Both Feeney and Rogers disclose interface elements associated with a scoreboard, time clock, time for answering questions, and questions answered correctly: Feeney discloses a summary area 330, visuals, concentric rings, countdowns, icons, time, clock

indicator, and number of Dallions (*see e.g.*, Ex. 1005, 13:61-14:6, 24:14-26, FIGs. 5-7); and Rogers discloses indicators with a progress bar, a pie chart, a count, a clock, and a digital timer (*see e.g.*, Ex. 1006, 19:56-20:15, FIGs 8-12).

84. Having looked to Rogers, a POSITA would have been motivated to combine the teachings of Rogers and Feeney to provide an indication of total time remaining to answer the series of questions or how much of the allotted time for answering the series of questions has elapsed. Addition of such a feature in Feeney would have enhanced the applicability of Feeney's interface to other types of games (e.g., those involving a speed round). (*Id.*; Ex. 1009, 3:40-5:25 (describing a game with a speed round in which "multiple contestants on one team will have the opportunity to answer as many questions as they can in the time allotted in the speed round").) In a game involving a speed round, contestants would find it useful to know how much time is left in the speed round. Feeney supports such a combination because it discloses that its disclosure applies to "any kind of game in which the players compete against each other." (Ex. 1005, 3:31-37.)

85. A POSITA would have had a reasonable expectation of success in combining the teachings of Feeney and Rogers because, as discussed above, both disclose similar software concepts for presenting questions and handling answers in a graphical user interface. (*Id.*, 3:39-48; Ex. 1006, 7:22-25.) Indeed, it would take

no more than basic software coding to combine the expressly disclosed features of Rogers' clock with Feeney's clock to indicate the total remaining time for an entire series of questions in a contest.

86. Providing a clock like Rogers' in a system like Feeney would have involved the predictable application of a known technique (Roger's clock that shows the total time remaining to answer all of the questions) to a known system (Feeney's user interface), where the combination merely provides a predictable outcome (display of total time remaining to answer Feeney's series of questions).

87. For the above reasons, Feeney in combination with Rogers discloses or suggests limitation [1.f]. The remaining aspects of Feeney (e.g., the display of the individual Dallions earned) is not affected by the combination with Rogers.

88. A POSITA would have understood that the functionality of [1.f] is enabled by server 12 in Feeney (and by extension the processor implementing contest administration system 80, *supra* Section IX.A.1.iii) because the user interface 300 can be "provided entirely by server 12." (Ex. 1005., 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a contest management component 86 that calculates Dallions to be awarded to a player and further includes a player interface 88 that "display[s] to the respective players various player-specific contest-environment information." (*Id.*, 5:25-37.) A

player's score and time remaining in the contests would be understood to be examples of "player-specific contest-environment information" as they are specific to a player.

- viii. [1.g] **"enabling teams of individual contestants to compete over a series of test questions for an allotted time period in an online format including both a test item presentation area and the real time scoreboard with time clock,"**

89. Feeney alone or in combination with Rogers discloses or suggests this limitation. As discussed above with reference to limitations [1.pre], [1.c] and [1.e], Feeney discloses an online competition in which the processor of system 80 enables the individual players to compete as a team (Ex. 1005., 21:51-62), where the teams "receive questions as a group" (*id.*, 22:15-22). As further discussed above with reference to limitation [1.e], these questions are provided for response in an allotted time period. Thus, Feeney alone or in combination with Rogers discloses or suggests **"enabling teams of individual contestants to compete over a series of test questions for an allotted time period in an online format."**

90. The online format further includes **"the real time scoreboard with time clock."** (*Supra* Section IX.A.1.vii.) And it includes a **"test presentation area."** As explained above in Section IX.A.1.vi, in view of Feeney's incorporation of the '179 application, Feeney discloses that the problems are delivered to the user

interface 300 of each player device (e.g., 21-24). This is further confirmed by Feeney's disclosure that questions and/or problems can be delivered on the user interface 300 by incorporating the '179 applications' alert-based client application. (Ex. 1005, 13:62-14:6.)

1) [1.g.i] “at least one of (1) live, if the teams have common time availability, wherein the real time scoreboard displays in real time at least one of (a) the individual score of the individual contestant and (b) the team scores of the competing teams, and (2) non-live, if the teams do not have common time availability, wherein the real time scoreboard displays in real time at least one of (a) the individual score of the individual contestant and (b) the team score of the individual contestant's team.”

91. Feeney in combination with Rogers discloses or suggests limitation [1.g.i] by displaying the individual score of the player in summary area 330.

92. While limitation 1.g recites certain steps to be performed by a processor, limitation [1.g.i] does not recite a verb. To the extent limitation [1.g.i] may be understood as reciting an additional step, it uses the language “at least one of” indicating that only one of the recited conditions must be satisfied. For example, in the case of live competition, either an individual score or team scores of competing teams must be displayed. In the case of non-live competition, either an individual score or team score of the contestant's team must be displayed. And the processor

need not enable both live and non-live competitions. Thus, limitation [1.g.i] can be satisfied if, for example, the scoreboard displays an individual score (like in Feeney) regardless of the mode of the competition (live or non-live).

93. Feeney discloses the interface 300 has a summary area 330 (“**the real time scoreboard**”) that displays “**the individual score of the individual contestant.**” (*Supra* Section IX.A.1.vii.) Thus, Feeney satisfies limitation [1.g.i] because display of an individual score is an option common to both live and non-live competition. That is, Feeney displays an individual score if the competition is live, and displays the same if the competition is not live.

94. Regardless, a POSITA would have understood that Feeney discloses the above individual score during live competition because Feeney discloses that the questions are delivered “simultaneously” to “tens of thousands” of “geographically dispersed” players, where the players are competing as part of teams. (Ex. 1005, 3:10-14, 19:61-67, 20:47-52, 21:51-62, 28:66-29:57.) In other words, Feeney discloses live competition between teams, which is only possible when the teams have common time availability. Thus, Feeney discloses “**live, if the teams have common time availability, wherein the real time scoreboard displays in real**

time at least one of (a) the individual score of the individual contestant and (b) the team scores of the competing teams.”¹⁰

95. Feeney also discloses **“non-live, if the teams do not have common time availability, wherein the real time scoreboard displays in real time at least one of (a) the individual score of the individual contestant and (b) the team score of the individual contestant's team”** because, as discussed above, a contestant's individual score is displayed if the contestant is participating in a contest. Thus, even if live competition is not occurring, the real time scoreboard displays in real time the **“individual score of the individual contestant.”**

2. Claim 2

- i. “The system as in claim 1, wherein the processor calculates a winner of the academic competition between teams or between respective individual contestants.”**

96. Feeney alone or in combination with Rogers discloses or suggests this claim. Feeney's summary area 330 can display the rank of a team or individual player relative to other teams and players. (Ex. 1005, 12:55-13:24.) The rank is

¹⁰ Given the claim's “at least one of” language, Feeney satisfies this limitation by satisfying the live feature.

calculated based on the accuracy of the answers, such as percentage of answers correct versus incorrect. (*Id.*, 13:17-24.) This rank is calculated by the contest administration system 80 because system 80 (specifically, contest management component 86) evaluates the responses to the questions and awards contest points (e.g., Dallions) from which the rank is determined. (*Id.*, 5:17-24 (“In the preferred embodiments, the contest management component 86 manages the real-time delivery of questions, the evaluation of responses, the awarding of contest points (usually referred to as Dallions™ in the current embodiments), any redemption of such points for prizes for other articles, and the delivery of other aspects of the overall contest environment. In essence, it preferably functions as the principal engine for the contest.”), 6:19-25 (“More preferably, each sponsor will have been allocated a specified number of points or Dallions for distribution to the players that have selected it, and the Dallions allocated to the sponsors have the same effect as the Dallions awarded by the main contest 102, e.g., so that they are counted in determining the individual players' ranks in the main contest 102.”), 21:11-50.¹¹) A player earning the most Dallions is the “winner.” (*Id.*, 28:17-20 (“A second such

¹¹ System 80 is implemented by the “processor.” (*Supra* Section IX.A.1.iii.)

event is a contest or tournament (e.g., conducted annually) in which the winner (e.g., the player earning the most Dallions) wins a year's free college tuition.”.)

97. A POSITA would have understood that determining the rank of a team during a contest discloses calculating a winner. For example, determining the team with the highest rank (e.g., #1 team) would disclose the winner of the competition. Thus, Feeney discloses claim 2.

3. Claim 3

- i. “The system as in claim 1, wherein the processor enables a contestant to elect to conceal his/her identity from a competing contestant or to permit the display of his/her name and photo on the scoreboard of the competing contestant.”**

98. Feeney alone or in combination with Rogers discloses or suggests this claim. Feeney discloses that a player’s profile card includes various information about the contestant (e.g., a photograph of the contestant). (Ex. 1005, 15:36-42 (“The profile card for a particular player preferably provides various kinds of information about the player. For example, Image pane 389 displays a photograph or graphic image that has been uploaded by the player whose profile card is being viewed, Username 390 indicates the username that has been selected by that player, and Identifier 392 indicates an identifier or characterization that has been assigned to the player.”).) But a contestant can choose to prohibit other players from

“access[ing]” *any* “information in the player’s profile card.” (*Id.*, 15:23-35 (“However, in certain embodiments of the invention, individual players have the ability to select an option to hide their status to other players (either all players, specifically designated players, or all players other than specifically designated players), in which case the player always would be shown as being “offline” or the Login Status Indicator 387 would provide a third designation, such as “status unavailable”, to those other players. Preferably, players from whom the player’s status is hidden do not have the ability to contact the player; in addition, in certain embodiments such players have limited or no access to the information in the player’s profile card, such as only being able to see that the username exists.”).) Thus, if a contestant chooses, another contestant/player cannot view the username or photo in the player’s profile card. Feeney’s system 80 (implemented by a processor) enables a contestant to **“elect to conceal his/her identity from a competing contestant.”**¹²

¹² A POSITA would have understood that a player would use the user interface 300 provided by system 80 (*supra* Section IX.A.1.iv) to manage access to their profile because player interface 88 (included in system 80) “receive[s] player information for storage by data management component 82.” (Ex. 1005, 5:25-27.)

4. Claim 4

- i. **“The system as in claim 1, wherein each contestant processing device presents the scoreboard with a clock face component that alerts the contestant as to whether he/she is on pace to finish the test questions in the allocated time frame.”**

99. Feeney alone or in combination with Rogers discloses or suggests this claim. Feeney discloses or suggests that the scoreboard includes a clock that alerts the player as to how much time is left to answer to respond. (*Supra* Section IX.A.1.vii.) Feeney in combination with Rogers discloses or suggests that the same clock alerts the player as to how much time is left to finish the entire series of questions. Thus, Feeney alone or in combination with Rogers discloses or suggests that **“wherein each contestant processing device presents the scoreboard with a [] component that alerts the contestant as to whether he/she is on pace to finish the test questions in the allocated time frame.”** Feeney further discloses that the clock can be “an analog clock where the time is up when an indicator hand . . . makes a full rotation.” (*Id.*, 24:14-20.) In other words, the clock in Feeney alone or in combination with Rogers is a **“clock face component,”** as claimed.

5. Claim 5

- i. **“The system as in claim 1, wherein each contestant processing device displays on the scoreboard an individual score as determined by a number of questions answered correctly by each of matched individual contestants, a team score as determined by calculating a total number of individual victories or by taking a running average of all or a number of individual contestant scores from the respective teams, or both the individual score and the team score.”**

100. Feeney alone or in combination with Rogers discloses or suggests this claim. Feeney discloses, *inter alia*, displaying a player's own rank or score within a particular contest against the other contestants (**“an individual score as determined by a number of questions answered correctly by each of matched individual contestants”**) (Ex. 1005, 12:55-13:5, 21:12-50) a team score determined by calculating an aggregate score of the team members (**“a team score as determined by calculating a total number of individual victories”**) (*id.*, 13:6-7.) or based on average accuracy percentage of the team members (**“or by taking a running average of all or a number of individual contestant scores from the respective teams”**) (*Id.*, 22:15-18). Feeney further discloses that each contestant device displays the above scores. (*Id.*, 21:48-50 (explaining that the rank(s) are “provided to the players” (plural), 10:53-11:5 (explaining that the disclosures pertaining to player device 21 applies to the other player devices).)

6. Claim 9

- i. “The system as in claim 1, wherein the processor further enables an administrator or a coach to create and save questions, including the assignment of images to the questions, or to choose questions from a database of questions submitted by other administrators or coaches for utilization in an academic competition.”**

101. Feeney alone or in combination with Rogers discloses or suggests this claim. Feeney discloses that the server 12 includes a tool that allows inputting “problems created by the contest’s administrators” and provides an “interface for tagging [the] problems with player-designated categories.” (Ex. 1005, 28:45-58 (“Several tools preferably are provided for use by the contest administrators (e.g., through server 12). One such tool inputs problems created by the contest’s administrators and provides an interface for tagging such problems with player-designated categories, either individually (e.g., by dragging the problem to the appropriate category/subcategory icon) or in groups (e.g., by highlighting or otherwise selecting multiple problems and then clicking the appropriate category icon). Another such tool (or the same tool) accepts new contest problems (e.g., trivia questions), maintains a database of problems previously presented to the players, accepts corrections (e.g., if an incorrect answer was previously marked as correct or if there are in fact two correct answers), and adjusts Dallions for players affected by

any such error.”); *see also id.*, 5:7-10.) The same tool “accepts new contest problems (e.g., trivia questions)” from the contest administrators. (*Id.*) A POSITA would have understood that this tool correlates with “user interface 84,” which “enables individuals associated with the contest administrator to provide contest questions and answers” saved in storage device 83. (*Id.*, 5:7-16¹³) Thus, Feeney discloses that **“the processor further enables an administrator or a coach to create and save questions.”**

102. Feeney further discloses that the questions can include images. (*Id.*, 24:41-47 (“The problems delivered to the players can be trivia questions (e.g., multiple choice or fill-in-the-blank) and/or various kinds of puzzles. In addition, rather than displaying the problem all at once, it instead could be revealed over time. In one example, blocks of an image are gradually revealed until the player guesses what the full image is (e.g., with faster times resulting in larger awards of Dallions).”).) Feeney therefore discloses that the questions created and saved by the

¹³ User interface 84 is implemented by the processor executing the functions of system 80. (*Id.*, FIG. 2; *supra* Section IX.A.1.iii.)

administrator includes **“the assignment of images to the questions.”** Feeney thus discloses or suggests claim 9.¹⁴

7. Claim 14

i. “A method for on-line academic competition, comprising:”

103. Feeney discloses this limitation for the reasons discussed above with reference to limitation [1.pre].

ii. “enabling, using a processing device, the creation of teams of individual contestants for participation in an academic competition;”

104. Feeney discloses this limitation for the reasons discussed above with reference to limitations [1.b] and [1.c].

¹⁴ The limitation “to choose questions from a database of questions submitted by other administrators or coaches for utilization in an academic competition” is optional as it is preceded by an “or.”

- iii. **“enabling a user, through a user interface, to perform at least one of the following: (1) create a league of teams and a cycle of academic competition amongst the league of teams, (2) search for and select at least one team for participation in an inter-team academic competition, and (3) divide a team into multiple teams for an intra-team academic competition;”**

105. Feeney discloses this limitation for the reasons discussed above with reference to limitation [1.d].

- iv. **“presenting, using a processing device, a series of test questions to the contestant processing devices of the individual contestants of competing teams for response in a time frame allocated for the academic competition;”**

106. Feeney discloses this limitation for the reasons discussed above with reference to limitation [1.e].

- v. **“providing a real time scoreboard with time clock at each contestant processing device that displays an individual contestant's progress with respect to both the time frame for answering questions and questions answered correctly while answering the series of questions during an academic competition, where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team; and”**

107. Feeney alone or in combination with Rogers discloses or suggests this limitation for the reasons discussed above with reference to limitation [1.f].

vi. **“enabling teams of individual contestants to compete over a series of test questions for an allotted time period in an online format including both a test item presentation area and the real time scoreboard with time clock, at least one of”**

1) **“(1) live, if the teams have common time availability, wherein the real time scoreboard displays in real time at least one of (a) the individual score of the individual contestant and (b) the team scores of the competing teams, and”**

2) **“(2) non-live, if the teams do not have common time availability, wherein the real time scoreboard displays in real time at least one of (a) the individual score of the individual contestant and (b) the team score of the individual contestant's team.”**

108. Feeney alone or in combination with Rogers discloses or suggests this limitation for the reasons discussed above with reference to limitation [1.g] and [1.g.i].

8. Claim 15

i. **“The method as in claim 14, further comprising the processing device calculating a winner of the academic competition between teams or between respective individual contestants.”**

109. Feeney alone or in combination with Rogers discloses or suggests this claim for the reasons discussed above with respect to claim 2.

9. Claim 16

- i. “The method as in claim 14, further comprising the processing device enabling a contestant to elect to conceal his/her identity from a competing contestant or to permit the display of his/her name and photo on the scoreboard of the competing contestant.”**

110. Feeney alone or in combination with Rogers discloses or suggests this claim for the reasons discussed above with respect to claim 3.

10. Claim 17

- i. “The method as in claim 14, wherein each contestant processing device presents the scoreboard with a clock face component that alerts the contestant as to whether he/she is on pace to finish the test questions in the allocated time frame.”**

111. Feeney alone or in combination with Rogers discloses or suggests this claim for the reasons discussed above with respect to claim 4.

11. Claim 18

- i. “The method as in claim 14, wherein each contestant processing device displays on the scoreboard an individual score as determined by a number of questions answered correctly by each of matched individual contestants, a team score as determined by calculating a total number of individual victories or by taking a running average of all or a number of individual contestant scores from the respective teams, or both the individual score and the team score.”**

112. Feeney alone or in combination with Rogers discloses or suggests this limitation for the reasons discussed above with respect to claim 5.

12. Claim 22

- i. “The method as in claim 14, further comprising the processor enabling an administrator or a coach to create and save questions, including the assignment of images to the questions, or to choose questions from a database of questions submitted by other administrators or coaches for utilization in an academic competition.”**

113. Feeney alone or in combination with Rogers discloses or suggests this claim for the reasons discussed above with respect to claim 9.

B. Feneey, Rogers, and Downs Disclose or Suggest the Features of Claims 9 and 22

114. In my opinion, Feneey, Rogers, and Downs disclose or suggest all of the features of claims 9 and 22.

1. Claim 9

- a) “The system as in claim 1, wherein the processor further enables an administrator or a coach to create and save questions, including the assignment of images to the questions, or to choose questions from a database of questions submitted by other administrators or coaches for utilization in an academic competition.”**

115. Feeney and Rogers in combination with Downs disclose or suggest claim 9 by disclosing **“wherein the processor further enables an administrator**

or a coach...to choose questions from a database of questions submitted by other administrators or coaches for utilization in an academic competition.”¹⁵

116. As discussed above in Section IX.A.6, Feeney discloses that the server 12 includes a tool that allows inputting “problems created by the contest’s administrators” and provides an “interface for tagging [the] problems with player-designated categories.” (Ex. 1005, 28:45-58.) The same tool “accepts new contest problems (e.g., trivia questions)” from the contest administrators and also “maintains a database of problems previously presented to the players.” (*Id.* at 28:53-55.) Thus, Feeney discloses a **“database of questions.”** (*See also supra* Section IX.A.1.ii.)

117. To the extent that Feeney does not expressly disclose that the contest administrator can **“choose questions from”** Feeney’s **“database of questions”** and/or that Feeney’s **“database of questions” does not include questions “submitted by other administrators or coaches for utilization in an academic competition,”** Downs discloses such a feature.

118. Downs discloses an “interactive learning system . . . that can provide simultaneous competitions between participants at remote locations.” (Ex. 1010,

¹⁵ Claim 9 uses the term “or” indicating that the phrase “to create and save questions, including the assignment of images to the questions” is optional.

1:8-15.) A school is an example of a “remote location.” (*Id.*, 3:1-4.) For example, a teacher at a remote location can execute a competition by “creat[ing] a competition on an interactive control unit 106,” which “stores competitions and displays them on the display television set 102” to the students. (*Id.*, 3:5-39.) The teacher can either create their own competition on unit 106 or unit 106 can receive competitions created by employees at a central broadcast facility. (*Id.*, 3:31-43 (“Competitions controlled by the interactive control unit 106 are input in one of two principal ways. In one way, a teacher creates a competition on the interactive control unit 106 itself (when it is not being used to run a competition) or creates them on a stand-alone personal computer and loads them via a floppy disk. The other principal way to input competitions into the interactive control unit 106 is for the interactive control unit 106 to receive competitions broadcast by satellite from a central broadcast facility 200. Employees at the central broadcast facility create educational competitions for use at all remote locations and load them into a central broadcast facility control unit 202.”).) A competition consists of questions (e.g., multiple-choice questions) and answers, and a teacher can edit the competition provided by the central broadcast facility by adding or deleting questions therefrom. (*Id.*, 7:16-27 (“Also included in storage for the interactive control unit 106 is program instructions for editing or creating quizzes (shown at 170). Through the quiz editor 168, the interactive control

unit 106 offers the capability for the teacher to alter the content of a competition provided from the central broadcast facility 200 by altering the content of a competition to specifically suit his or her lesson plans. For example, a teacher could select a competition on the subject of the Civil War from the library of competitions (stored at 168) supplied from the central broadcast facility 200. The teacher could then add or delete questions, thereby creating a customized competition that can be played”), 7:28-65, 8:46-49 (“The interactive control unit allows competitions to be created or modified in many respects. Questions can be deleted, added or modified.”).) Downs thus discloses or suggests that a teacher at a remote location (“**an administrator or a coach**”) is able to choose questions, stored in unit 106, prepared by other employees (“**to choose questions from a database of questions submitted by other administrators or coaches**”) for utilization in an academic competition. Because unit 106 stores the questions, it is a “**database of questions.**”

119. A POSITA would have looked to Downs to refine the functionality of the Feeney-Rogers combination because Downs also relates to an online system for managing a test or competition. Having looked to Downs, a POSITA would have been motivated to add a functionality like in Downs to the processor of server 12 in the Feeney-Rogers combination to allow the administrator in Feeney to choose questions from a database of questions prepopulated with questions and answers

prepared by other administrators or employees. Feeney already provides functionality via the user interface component 84 in system 80 of server 12 whereby the administrator can provide contest questions and answers. (Ex. 1005, 5:7-10.) The combination with Downs would have merely required adding functionality in system 80 so that the administrator can select questions created and stored in the database by other coaches or administrator. Doing so would have, for example, minimized the need for the administrator to create new questions for the contest; the administrator could now simply reuse or repurpose old questions.

120. A POSITA would have had reasonable expectation of success in combining the teachings of Feeney, Rogers, and Downs in the manner described above. For example, as discussed above, Feeney discloses a database of questions, including database of problems previously presented to the contestants, and tools for accepting new problems from contest administrators. Thus, it would be within ordinary skill to further provide a database of questions previously prepared by other administrators or employees, and allow a contest administrator to create contests from such a database. Indeed, it would take no more than basic software coding to implement such question selection features in the Feeney-Rogers system.

121. The above combination would have involved the predictable application of a known technique (selecting questions from a database of questions

populated by others) to a known system (the Feeney-Rogers system), where the combination merely provides a predictable outcome (the administrator being able to create new contests or competitions by selecting previously created questions).

2. Claim 22

- a) **“The method as in claim 14, further comprising the processor enabling an administrator or a coach to create and save questions, including the assignment of images to the questions, or to choose questions from a database of questions submitted by other administrators or coaches for utilization in an academic competition.”**

122. Feeney in combination with Rogers and Downs discloses or suggests claim 22 for the reasons discussed above with respect to claim 9.

C. Feneey, Rogers, and Siddique Disclose or Suggest the Features of Claims 11 and 24

123. In my opinion, Feneey, Rogers, and Siddique disclose or suggest all of the features of claims 11 and 24.

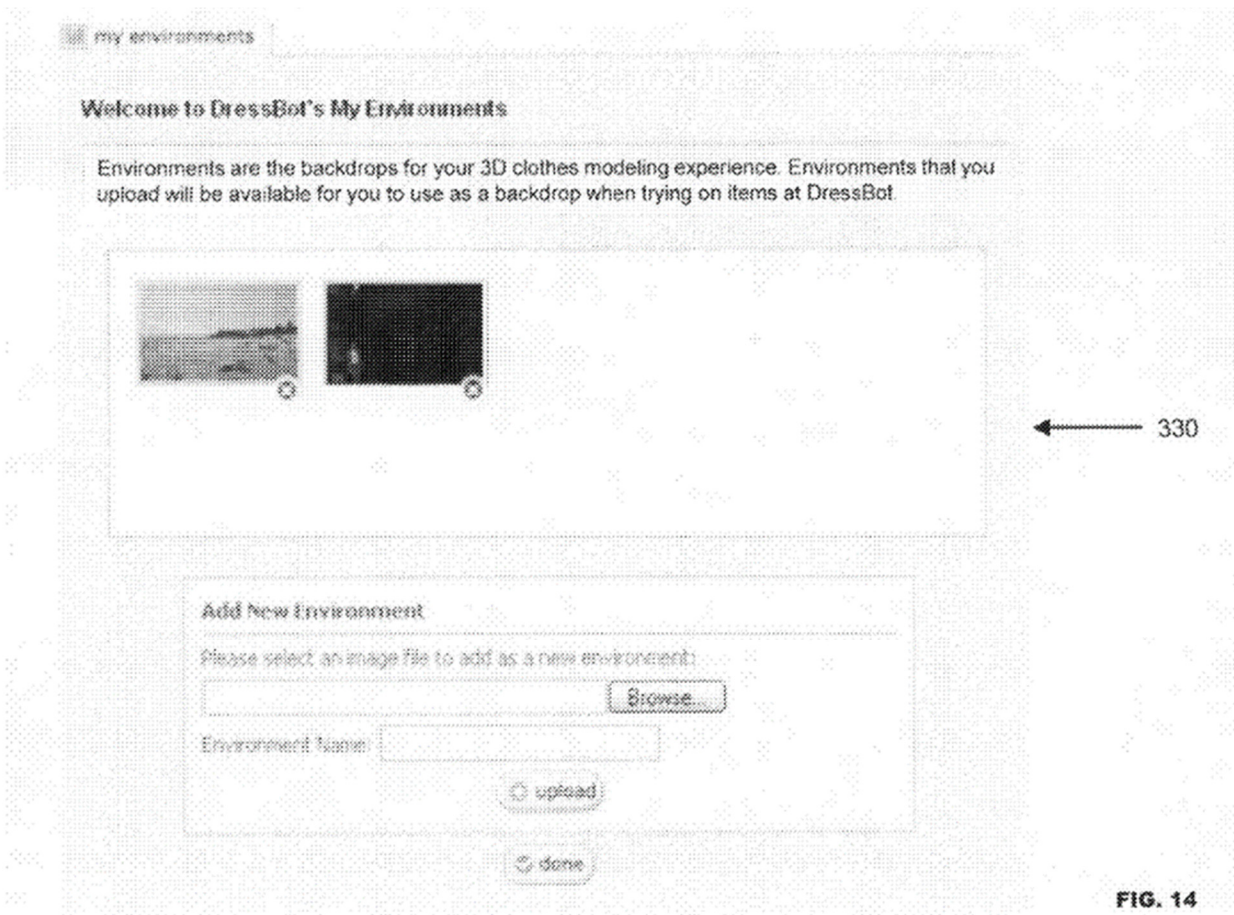
1. Claim 11

- a) **“The system as in claim 1, wherein a contestant processing device enables an individual contestant to upload a photo, or select from collection of photos, to be used as a background on a display to the questions presented in an academic competition.”**

124. The Feeney-Rogers-Siddique combination discloses or suggests claim 11.

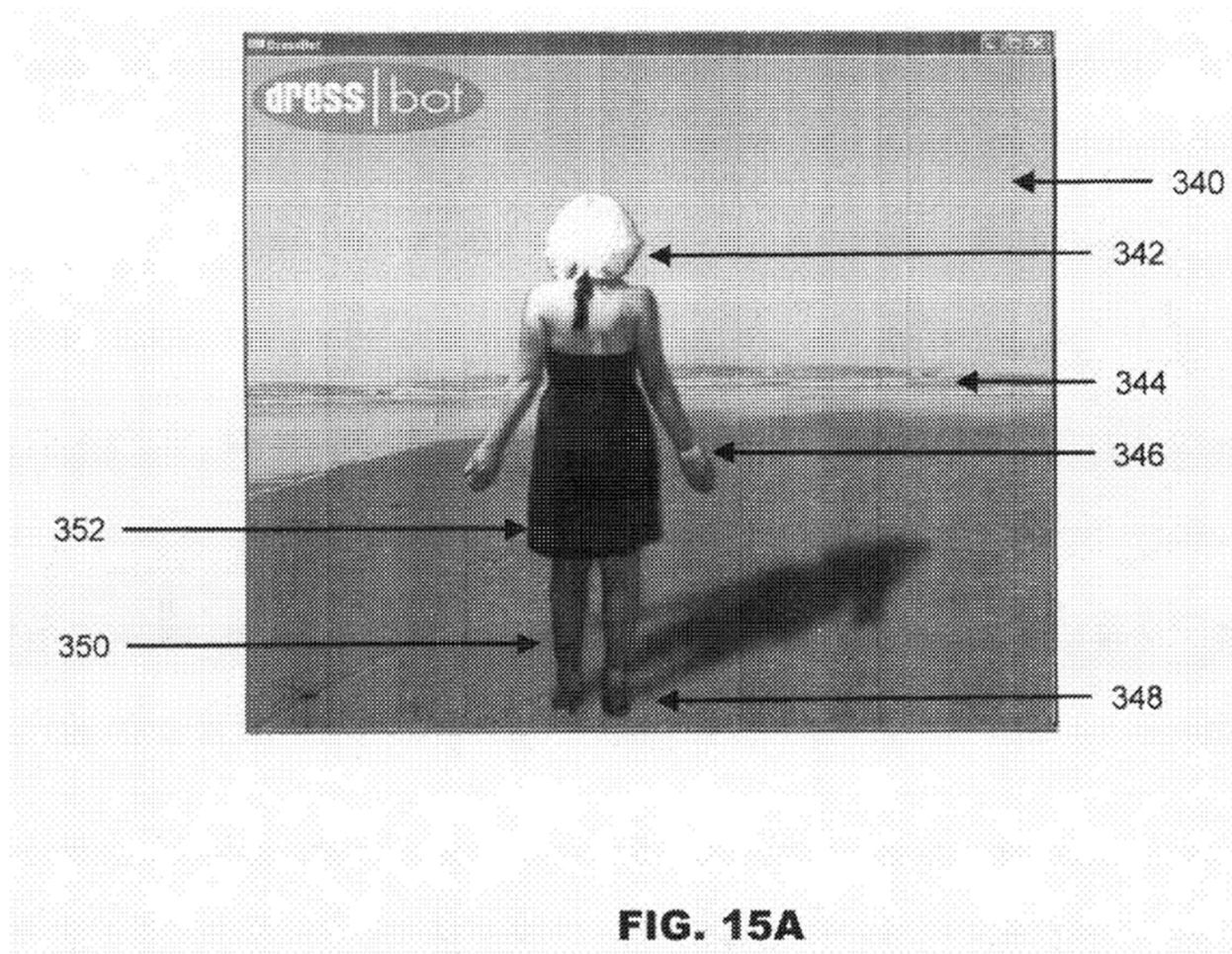
125. Feeney discloses presenting content (e.g., questions (*id.*, 6:33, 47, 24:41-43)) in the main display area 345 of the interface 300 (*id.*, 13:25-28, FIG. 5). Feeney also discloses the functionality of uploading photos, as system 10 enables players to upload a photo for their player card. (*Id.*, 15:36-40, FIG. 6.) As explained below, a POSITA would have been motivated to improve Feeney's interface to also upload a background for other portions of the interface 300, such as in the main display area 345 where the questions are presented.

126. Siddique discloses how a user can set a background photo (e.g., of a beach) to simulate how their character looks with certain apparel (e.g., a bracelet) before buying the apparel. (Ex. 1011, FIGs. 14, 15.) Siddique discloses a system to "collaborate with other users in the online environment" (*id.*, Abs.) to create customized user models of a person (*id.*, [98]). The user can then add apparel items to the user models to see how the apparel would look on the person before buying the apparel. (*Id.*) Modeling apparel enables interactive shopping and the "user models may be exported to gaming environments including third party games." (*Id.*) The user can also use background photos to simulate how the user model and apparel would look in various environments. (*Id.*, [187], FIG. 14.) In particular, as shown below in figure 14, Siddique provides the user an option to "upload[] an image" as a backdrop for their user model or select from "default backgrounds." (*Id.*)



(*Id.*, FIG. 14.)

127. After selecting or uploading a background image, the user can simulate how their user model and apparel would look in the environment specified by the background image. (*Id.*, [188], FIG. 15A). For example, the user can simulate how their user model looks with a certain bracelet and hairstyle while on the beach. (*Id.*)



(*Id.*, FIG. 15A.)

Thus, Siddique discloses or suggests **“upload a photo, or select from collection of photos, to be used as a background on a display.”**

128. The combination of Feeney and Rogers discloses presenting questions in an interface. As explained above, Siddique discloses adding a background photo to a user interface for interactive shopping and games (e.g., the user interface set forth in figure 15A). After looking at Feeney and Rogers for presenting questions

in an interface, a POSITA would have been motivated to use Siddique's teachings in the Feeney-Rogers combination to further enable a player to customize the ornamental look of the user interface 300. A POSITA would have been motivated to adopt Siddique's functionality for selecting or uploading images in the Feeney-Rogers system to enable a user to choose a preferred background image for the series of questions. Indeed, choosing a preferred background (e.g., a home screen) was a commonly available functionality across computing devices before 2012.

129. A POSITA would have had reasonable expectation of success in combining the teachings of Feeney, Rogers, and Siddique. As discussed above, Feeney already discloses functionality for a user to upload a photo. Thus, it would have taken no more than basic software coding to implement Siddique's background in the Feeney-Rogers interface for presenting questions. In fact, such a combination would have simply involved the predictable application of a known technique (Siddique system's disclosed functionality that allows a user to select a background photo) to a known system (the Feeney-Rogers' user interface), where the combination merely provides a predictable outcome (display of a background photo behind Feeney's series of questions). Thus, the Feeney-Rogers-Siddique combination discloses or suggests that **“a contestant processing device enables an individual contestant to upload a photo, or select from collection of photos, to**

be used as a background on a display to the questions presented in an academic competition.”

2. Claim 24

- a) **“The method as in claim 14, further comprising a contestant processing device enabling an individual contestant to upload a photo, or select from collection of photos, to be used as a background on a display to the questions presented in an academic competition.”**

130. Feeney in combination with Rogers and Siddique discloses or suggests claim 24 for the reasons discussed above with respect to claim 11.

D. Feeney, Rogers, Panetta, and Maurseth Disclose or Suggest the Features of Claims 1-5, 9, 14-18, and 22

131. In my opinion, Feeney, Rogers, Panetta, and Maurseth disclose or suggest all of the features of claims 1-5, 9, 14-18, and 22. This ground incorporates the analysis of the Feeney-Rogers combination for claims 1-5, 9, 14-18, and 22. *See* Section IX.A. It also includes additional analysis to address two limitations of claims 1 and 14 based on Panetta and Maurseth. Thus, except for the additional analysis below, this ground is identical to the Feeney-Rogers ground for claims 1-5, 9, 14-18, and 22.

1. Academic Competition

132. I have considered a scenario in which Patent Owner argues that Feeney does not disclose or suggest that its system is configured for handling an “academic

competition.” While such an argument would be incorrect, Panetta discloses such a feature. Panetta discloses “a method of practicing educational exercises” in which “teams of students [] compete against each other.” (Ex. 1012, Abs.) For example, “questions are posed to competing teams of students who compete against each other in a baseball game format.” (*Id.*, [0022].) A teacher “establishes teams of students” and “each player logs in with their password.” (*Id.*, [0033].) The players from opposing teams take turns answering questions. (*Id.*, [0044] (“The premise is simple. Students answer the questions correctly, make hits and score runs. Correctness and speed are a must, with the emphasis on being correct. In an exemplary embodiment, a series of seven questions are posed each inning, each progressively harder, each in perfect compliment with the teaching syllabus.”).)

133. A POSITA would have looked to Panetta because like Feeney and Rogers, Panetta involves a competition or test where questions are provided to the user. Having looked to Panetta, a POSITA would have recognized that academic competitions involving teams of students can be useful as a learning aid. (Ex. 1012, [0003]-[0004].) Given Feeney’s teachings of a comprehensive system for hosting contests, where the contest can be “any kind of game in which the players compete against each other” (Ex. 1005, 3:31-37), a POSITA would have been motivated to combine the teachings of Panetta with Feeney and Rogers to allow the Feeney-

Rogers combined system to be utilized for academic competitions. Doing so would have expanded the applicability of the Feeney-Rogers combined system. For example, a POSITA would have been motivated to configure Feeney's system such that schoolteachers can serve as administrators to create academic contests with students as the players. This would have allowed teachers and students the ability to take advantage of the vast number of contest features presented by Feeney.

134. Configuring the Feeney-Rogers combined system to allow an academic competition would have been within ordinary skill and would not have required much (if any) change to the underlying system configuration. This is supported by Feeney, which states that the contest can be "any kind of game in which the players compete against each other." (Ex. 1005, 3:31-37.)

2. "enabling a user, through a user interface connected to said database, to perform at least one of the following: . . . (3) divide a team into multiple teams for an intra-team academic competition"

135. As discussed above in Section IX.A.1.v, Feeney discloses one of the three options listed in limitation [1.d]. Maurseth additionally discloses the third option: dividing a team into multiple teams for an intra-team academic competition. Maurseth discloses a method of playing an educational game in which an organization is divided into aggregate teams, which are then further divided into "mini-teams." (Ex. 1007, Abs., [0033] ("FIG. 2 is a diagram of a separation of an

organization into associated teams in accordance with an exemplary embodiment of the present invention. An organization 110, is divided into aggregate teams, 112 and 114. In this embodiment, the organization is divided into two aggregate teams. In other embodiments, there may be two or more aggregate teams as exemplified by aggregate team 115. Each aggregate team is then divided into teams, such as aggregate team 112 into teams 116 and 118. In this embodiment, the aggregate team is divided into two teams. In other embodiments, there may be two or more teams as exemplified by team 119. Finally, each team is divided into mini-teams, such as team 116 into mini-teams 120 and 122. Finally, each mini-team is composed of one or more mini-team members 124.”.) “Each mini-team plays [] the educational game with other mini-teams from the same team.” (*Id.*, [0039].)

136. A POSITA would have looked to Maurseth because it relates to games involving teams like Feeney. Having looked to Maurseth, a POSITA would have recognized that contest administrators need the flexibility to be able to divide teams into mini-teams depending on the needs of a contest. For example, if teams get too large, the administrator could need the ability to divide the teams into sub-teams and host the competition between the sub-teams. Thus, a POSITA would have been motivated to configure the Feeney-Rogers system to provide the ability for the administrator to divide teams through Feeney’s user interface 84. (Ex. 1005, 5:7-10

(user interface 84 allows contest administrator to “manage the hosted contest(s).”).)

And a POSITA would have a reasonable expectation of success in providing such a feature in the Feeney-Rogers system. Indeed, providing such a feature would take no more than basic software coding.

E. Feeney, Rogers, Panetta, Maurseth, and Downs Disclose or Suggest the Features of Claims 9 and 22

137. Feeney, Rogers, Panetta, Maurseth, and Downs disclose or suggest claims 9 and 22 for reasons similar to those discussed in Section IX.B. A POSITA would have been motivated to combine the Feeney-Rogers-Panetta-Maurseth system and method set forth in Section IX.D with the teachings of Downs and have a reasonable expectation of success in doing so, for reasons similar to those discussed above in Section IX.B. The addition to Panetta and Maurseth for the independent claims, as in Section IX.D, does not impact the analysis for claims 9 and 22 set forth in Section IX.B.

F. Feeney, Rogers, Panetta, Maurseth, and Siddique Disclose or Suggest the Features of Claims 11 and 24

138. Feeney, Rogers, Panetta, Maurseth, and Siddique disclose or suggest claims 11 and 24 for reasons similar to those discussed in Section IX.C. A POSITA would have would have been motivated to combine the Feeney-Rogers-Panetta-Maurseth system and method set forth in Section IX.D with the teachings of

Siddique and have a reasonable expectation of success in doing so, for reasons similar to those discussed above in Section IX.C. Indeed, the addition to Panetta and Maurseth for the independent claims, as in Section IX.D, does not impact the analysis for claims 11 and 24 set forth in Section IX.C.

X. CONCLUSION

139. In summary, it is my opinion that all of the features recited in claims 1-5, 9, 11, 14-18, 22, and 24 of the '825 patent are disclosed or suggested by the prior art.

140. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: March 7, 2025

By: 

Dr. Gregory D. Abowd