Progressive Pictorial & Motion Based CAPTCHAs

RELATED APPLICATION DATA

The present application claims the benefit under 35 U.S.C. 119(e) of the priority date of Provisional Application Serial no. 61076495 filed June 27, 2008 which is hereby incorporated by reference. The application is further related to the following applications, all of which are filed on this same date and incorporated by reference herein:

Pictorial Game System & Method; serial no. _____ (attorney docket number 2009-4)

Internet Based Pictorial Game System & Method; serial no. _____ (attorney docket number 2009-5)

FIELD OF THE INVENTION

The present invention relates to challenge systems which include pictorial and/or motion features.

BACKGROUND

A popular board game introduced many years ago goes by the name of Pictionary™. In this game teams of players compete against each other by having one member of the team manually draw an object (which could be a person, place, thing, action, etc.) while the other members of the team attempt to guess the identity of the object. A time factor is also accounted for in that the team must determine the object within a certain time period.

Pictionary™ is one form of pictorial game that has enjoyed great success in the market, but it has not been rendered into a form suitable for Internet accessibility. One example of a drawing game that has been implemented in electronic form is depicted in US Publication No. 2007/0018393, incorporated by reference herein. It is apparent that there is a need for other similar types of games with different rules, objectives that can be enjoyed in electronic form, and particularly on sites available on the Internet (including social network sites) and other hand held devices (including advanced phones).

CAPTCHAs (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) are well-known for controlling access to computers and resources on the Internet. A recent example by Sanghavi et al. (US Publication No. 2009/0113294) incorporated by reference herein demonstrates the use of a progressive CAPTCHA. The use of a progressive technique increases the cost to spammers seeking to use human capital to circumvent text based CAPTCHAs. While Sanghavi et al propose their approach for conventional (distorted) text type challenges, they fail to appreciate the potential for image based challenges. In particular, recognition of images can be incorporated as part of a picture based game to develop appropriate challenges, unlike text approaches.

SUMMARY OF THE INVENTION

An object of the present invention, therefore, is to reduce and/or overcome the aforementioned limitations of the prior art.

A first aspect of the invention concerns a method of conducting a pictorial based electronic game comprising the steps: presenting an electronic image authored by a human composer within a graphical interface; wherein the electronic image is presented in a visual sequence that substantially tracks a rendering of such image as performed by such human composer; associating the electronic image with one or more concepts; providing a rule set for a user to use to predict an identity of the one or more concepts; processing responses from the user in compliance with the rule set to determine if the user has accurately determined an identity of the one or more concepts associated with the image; wherein the electronic image is presented to the user during at least a portion of the visual sequence substantially without explicit textual information describing the one or more respective concepts.

The electronic image can be presented on a user's television system, a browser, a portable computing device such as a PDA, cell phone, etc. The images can be created automatically or by human composers with an online graphical composition tool. In some embodiments the responses from the user are tabulated to compute a performance of the user, the electronic image, and an artist associated with the electronic image.

Some embodiments may also provide one or more audiovisual cues and/or clues to the user to assist in decoding the electronic image. An electronic advertisement can be provided as part of the one more audiovisual cues and/or clues. The audiovisual cues and/or clues can be derived from images associated with a second set of concepts semantically related to the one or more concepts.

For some applications the electronic image is presented at different time intervals with differing levels of resolution, noise and/or pixelation.

In other applications the responses are provided as speech utterances and recognized by a speech recognition engine. The speech recognition engine

can be configured to listen to multiple users simultaneously to determine a winner.

A graphical tool can be provided to permit the user to create a second electronic image to be decoded by a second user. Users can also avail themselves of a file uploading tool in some cases for permitting the user to upload a photographic file image to be decoded by a second user.

The invention also supports team play for some embodiments. Different teams can compete against each other, even from at different physical locations. In team play the teams can influence an identity and/or a composition of the electronic image during a competition.

In some embodiments the ability to repeat the game for a plurality of second electronic images constituting a benchmark set is allowed, so that the user's responses are measured against other users to determine a performance rating relative to the benchmark set. A recommendation engine can be used to recommend at least one of an artist or a second electronic image to the user based on the responses.

Still further embodiments derive the electronic image automatically based on a content of an Internet page. In some portable applications a series of different electronic images are presented in response to a change in orientation of a portable device which is presenting the images.

Another aspect of the invention concerns conducting a pictorial based electronic game comprising the steps: presenting an electronic image within a graphical interface, the electronic image being derived from a scene captured by a machine and embodied in a digital and/or photographic form; wherein the electronic image is presented in a visual sequence that varies so that content is gradually revealed for the image over a first time period; associating the electronic image with one or more concepts; providing a rule set for a user to use to predict an identity of the one or more concepts; processing responses from the user in compliance with the rule set to determine if the user has accurately determined an identity of the one or more concepts associated with the image; wherein the electronic image is presented to the user during at least a portion of

the first time period substantially without textual information describing the one or more respective concepts.

An additional step can be performed to combine the digital and/or photographic form with other metadata for the scene in to the electronic image. A computing system can be trained and employed to automatically find digital and/or photographic form images in one or more Internet accessible image repositories. The electronic images can include scene component, scene timing information and device orientation for the scene as part of the electronic image. Advertising information for the scene can also be incorporated as part of the electronic image.

Still another aspect concerns conducting a pictorial based electronic game comprising the steps: presenting an electronic image within a graphical interface, the electronic image being derived from a scene captured by a machine and embodied in a digital and/or photographic form; wherein the electronic image is presented in a visual sequence that varies so that content is gradually revealed for the image over a first time period; associating the electronic image with one or more concepts; providing a rule set for a user to use to predict an identity of the one or more concepts; processing responses from the user in compliance with the rule set to determine if the user has accurately determined an identity of the one or more concepts associated with the image; wherein the electronic image is presented to the user during at least a portion of the first time period substantially without textual information describing the one or more respective concepts.

Another aspect of the invention concerns operating an Internet based pictorial game with a computing system comprising: providing a database of game images related to associated topics, the game images being generated by human composers; associating the electronic image with one or more concepts; providing a rule set for a user to use to give a prediction of an identity of the one or more concepts; presenting the game image with the computing system in a visual sequence that substantially tracks a rendering of such image as performed by such human composer; automatically processing responses from the user in

compliance with the rule set with the computing system to determine if the user has accurately determined an identity of the one or more concepts associated with the image; wherein the electronic image is presented to the user substantially without explicit textual information describing the one or more respective concepts.

The game image is preferably presented within a web page loaded in an Internet browser, and can be part of a game website, and/or integrated as part of a personal profile page on a social networking site.

As with the other approaches users can participate as a team or in competition against each other in providing the predictions. Their scores can be based on a time required to give an accurate prediction for the image. Additional visual clues semantically related to the respective concepts can be presented simultaneously to the user with the game images.

Advertisements can be matched to the game images based on a plurality of bids provided in an auction by multiple advertisers. The ads can be matched to artists based on a plurality of bids provided in an auction by multiple advertisers for artists composing the game images.

Still another aspect concerns operating an Internet based pictorial game with a computing system comprising: providing a database of game images related to associated topics; associating the game image with one or more concepts; providing a rule set for a user to use to give a prediction of an identity of the one or more concepts; presenting the game image with the computing system in a visual sequence that varies so that content is gradually revealed for the image over a first time period; automatically processing responses from the user in compliance with the rule set with the computing system to determine if the user has accurately determined an identity of the one or more concepts associated with the image; wherein the electronic image is presented to the user during at least a portion of the first time period substantially without explicit textual information describing the one or more respective concepts. The game image is preferably revealed in a spatially random sequence.

A further aspect concerns operating an Internet based pictorial game on a

social networking site with a computing system comprising: providing a database of game images related to associated topics; associating the electronic image with one or more concepts; wherein the game images are contributed by members of the social networking site; presenting the game image with the computing system within a social networking site page in a visual sequence that varies so that content is gradually revealed for the image over a first time period; wherein the electronic image is presented to the user during at least a portion of the first time period substantially without explicit textual information describing the one or more respective concepts; automatically processing responses from the user with the computing system to determine if the user has accurately determined an identity of the one or more concepts associated with the image; selectively publishing results of the user's performance on the social networking site. In some embodiments multiple members of the social networking site can play the game in a collaborative mode.

Yet another aspect is directed to a pictorial based electronic game that includes one or more software modules implemented in a computer readable medium to effectuate the above aspects.

Another aspect concerns a method of testing recognition of images for a CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) system comprising: automatically electing an electronic image for a participant with a computing system, wherein the electronic image comprises imagery other than words; associating the electronic image with one or more concepts; progressively revealing information over a first time period for the electronic image within an interface for the participant using the computing system; automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from the participant for the one or more concepts associated with the electronic image.

Preferred embodiments use a step of calculating a percentage of participants able to decode and accurately guess the one or more concepts within a predetermined time. The electronic image can be presented at different time intervals with differing levels of resolution, noise and/or pixelation. The

electronic images can then be randomly selected as needed within a CAPTCHA system for granting access to resources of a second computing system, including a portable electronics device.

A further aspect concerns providing a visual CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge comprising: automatically electing an electronic image for a participant with a computing system, wherein the electronic image comprises imagery other than words; associating the electronic image with one or more concepts; progressively revealing information over a first time period for the electronic image within an interface for the participant using the computing system; automatically processing responses from the participant with the computing system to detect if a guess from the participant for the one or more concepts associated with the electronic image meets a required threshold.

In some embodiments the responses are received in audible form and processed by a speech recognition device adapted to recognize human voices. The visual CAPTCHA challenge can be combined with a physical CAPTCHA challenge requiring the user to manipulate the portable computing device in a prescribed manner. The physical CAPTCHA challenge can also interact with elements of the electronic image and/or other objects presented in the interface.

Another aspect is directed to providing a motion and/or orientation based CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge on a portable computing device comprising: automatically electing a manipulation challenge for a user with the portable computing device, wherein the manipulation challenge includes a set of physical manipulation instructions for the portable computing device for the user; automatically processing sensory data associated with user movements and/or manipulations of the portable computing device; automatically determining if the user movements and/or manipulations from the user meet a required threshold for satisfying the set of manipulation instructions.

The set of physical manipulation instructions for the motion and/or orientation based CAPTCHA challenge can be presented in an electronic image,

and/or in audible form by a text to speech engine operating on the portable computing device. The set of physical manipulation instructions typically require the user to move the portable computing device so as to manipulate objects presented in an interface. For example, the set of physical manipulation instructions may require the user to orient a needle of a virtual compass in a specified direction, or explain (in spoken form) what direction the needle is pointing to at any moment in time. Alternatively the physical manipulation instructions can require the user to speak or blow into a microphone.

Still another aspect concerns providing a touch based CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge on a portable computing device comprising: automatically electing a manipulation challenge for a user with the portable computing device, wherein the manipulation challenge includes a set of physical touch instructions for the portable computing device for the user; automatically processing touch sensory data associated with user movements and/or manipulations of objects within a graphical interface of the portable computing device; automatically determining if the user touch sensory data meets a required threshold for satisfying the set of physical touch instructions.

In some embodiments the set of physical touch instructions for the motion and/or orientation based CAPTCHA challenge are presented in an electronic image, and/or in audible form by a text to speech engine operating on the portable computing device. The instructions may require the user to arrange a set of letters on the graphical interface, or orient an object in a proper direction.

A further aspect concerns the fact that the various CAPTCHA challenges are embodied in a computer readable form and implemented as one or more routines executing on a portable computing device which also has motion, orientation, touch and/or microphone sensors.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an illustration of a first embodiment of a pictorial game implemented on a stand alone computer or console;

FIG. 2 is an illustration of a second embodiment of a pictorial game implemented on an Internet website;

FIG. 3A illustrates a preferred embodiment of a pictorial game image builder;

FIG. 3B illustrates a preferred embodiment of a pictorial game image presentation engine;

FIG. 3C illustrates a preferred embodiment of a pictorial game tabulating module;

FIG. 3D illustrates a preferred embodiment of a pictorial game synthesis-suggestion module;

FIG. 3E illustrates a preferred embodiment of a pictorial game speech recognition module;

FIG. 3F illustrates a preferred embodiment of a pictorial game advertising module;

FIGs. 3G, 3H and 3J show examples of user contributed content that can be artistically styled and formatted for embodiments of the present invention;

FIG. 4 depicts a preferred embodiment of a pictorial game website;

FIG. 5 illustrates a preferred embodiment of a pictorial game team rating module;

FIG. 6 illustrates a preferred embodiment of a variant of a rule set used in a pictorial game;

FIG. 7 depicts a preferred embodiment of a game screen used in a pictorial game;

FIG. 8 depicts a process for integrating advertisements and epicts in accordance with the present invention.

DETAILED DESCRIPTION

FIG. 1 is an illustration of a first embodiment of an electronic pictorial game 100 implemented on a stand alone computer or console. In this embodiment an input device 110, which may be an electronic tablet, pad, or equivalent canvass is used by a human artist to create electronic pictures, generally referenced herein as "epicts." Again, as noted above, the epicts may represent human authored viewable renditions of human perceivable concepts, which, in the broadest sense may be in the form of ideas, people, places, things, actions, emotions, etc. In other cases the epicts may be conventional electronic photographic images which have been formatted to be compatible with an accompanying presentation system.

A stylus 115 is preferably used to aid with such process, and is adapted for human manipulation such as in the form of a hand held pen. Other types of manipulable tools can also be used of course depending on the particular game and desired manipulation (eye, head, foot, etc.) required to provide input.

The epict is displayed for viewing by the artist and other game participants on a display 120 which may be coupled to or part of a computing device with a software/hardware engine adapted for rendering the image in appropriate form. Thus the display may be part of a television, a computer monitor, etc., and the accompanying computing device may be a personal computer, a game console or other similar device.

Data is communicated to and from the input device 110 through a communications channel 125 which is preferably a wireless link. In some embodiment it may be desirable to provide feedback to the artist in the form of game rules, suggestions, etc. to the tablet for consideration. The image data can be transferred over the channel in any desired form.

Other variations of such architecture are of course possible, such as the use of multiple tablets/pads 110 (and accompanying stylus devices 115) to allow for multi-player simultaneous play. In such instances it may be useful to divide display 120 into distinct regions and partitions for displaying the various artistic renditions. For example, with 4 artists the display could be divided into 4

quadrants, which would allow participants to view 4 simultaneous renditions of an object.

In other embodiments a handheld pointer 130 may be used to draw directly on the screen display 120. The pointer may be of the type used in the Wii gaming platform which is a well-known system for this type of interactivity. For some embodiments it may be possible to use an electronic PDA or cellphone that is synced to the gaming console 120 to provide the epicts.

In its most basic form the pictorial game 100 can be configured to use a set of rules and scoring options that imitates the functionality of the Pictionary game noted earlier. For example the participants could be required to rotate the artist function, the participants could be required to move a visible token across a virtual playboard projected on display 120, the participants required to guess the concept in a particular time period, etc. In this version of the game, the participants play on teams which compete against each other to guess what concept is being drawn by a co-team member. The concepts may be supplied by the game engine 120, or may be supplied by a remote server 145. It would be relative easy for these functions to be implemented electronically and this option may be attractive to persons who like such game and want to duplicate the experience in enhanced form with an electronic platform. Nonetheless a variety of additional or modified rules and options for drawing, scoring, guessing, etc., could be elected depending on the desired game format, and such features could be adopted on a game by game basis by the game host and participants.

As an example of such modified rules, the game could be run without requiring players/participants to provide responses or guesses. In one such case artists could contribute their epicts in connection with an ongoing event that they are attending (e.g., a concert, sporting event, trade show and the like), viewing (as in a television broadcast or gaming experience seen on receiver 147) or hearing. The epicts could be directed to different topics and aspects of the vent, and could form part of a collective artistic gallery that is presented to a larger audience of the event simply for viewing and entertainment. Again, the organizers of such event could use human or machine editors to solicit and

select particular ones of the epicts that appear superior to others. For example at a sports stadium/arena a fan's live artistic contribution could be displayed on the scoreboard and the like.

In other embodiments the invention could be used at various events to solicit and encourage crowd and audience participation. For example, at a music concert, attendees could be given a chance to enter their sketches of the events occurring at the concert, such as the make up of the band, caricatures of the band members, etc. These sketch submissions could be uploaded and viewed by event managers to identify and select particular sketches for recognition. The recognition in turn could consist of financial or non-monetary incentives for the contributor. In other instances fan contributions could be displayed and viewed dynamically (along with attribution to the fan by name, seat number, etc.) as they are created for further enjoyment. This same format could be used at sporting events and other large public gatherings where it would be desirable to report graphical data in real-time for public consumption.

For some games it may be desirable for the participants to upload the game data to an offsite location for storage, review, etc., using a data feed 140. The epicts, concepts and participant information could thus be integrated into the feed 140 which can be incorporated within a social network site page or broadcast to other authorized friends and third parties. For example many social networking sites now include specific areas for allowing user contributions to be added dynamically to a personalized page.

Similarly the epicts may be compiled by concept, topic, etc. by a remote server 145 for presentation to other network users. The remote server may be programmed with additional game reward logic to give prizes, recognition, etc. to participants and teams in real-time to facilitate and increase game interest. If desired, the entire game could be journalled and replayed (at higher speeds as well) at a later time for viewing.

It will be understood by those skilled in the art that other features could be implemented into the present embodiment to add to the interest/excitement of the game. For example, an express option to include musical cues could be added,

so that the artist's rendition is accompanied by a song or other audible clue that assists the participants to guess the concept in question.

To assist with this function automated music matching logic 150 could be used to coordinate the visual rendering of the epict with the music chosen by the artist. For example if the artist took 30 seconds to sketch a picture of a bird, the music matching logic could be used to automatically select and extract an equivalent (an relevant) 30 seconds of music (perhaps with lyrics masked to avoid explicit rendering of the answer) from a song such as "Blackbird" by the Beatles to present with the epict. The music excerpts can be obtained from any one of a number of online sources, and may be further cropped as needed to accommodate a particular epict. To make their incorporation easier, they can be catalogued by different topic tags, so that they can be identified and selected easily by a human artist. By keeping the music excerpts short the issues of copyright and fair use can be minimized.

As further explained, speech recognition (as described below in more detail) could also be incorporated to recognize participant utterances and assist with scoring.

A second embodiment of a pictorial game 200 implemented on an Internet website is shown in FIG. 2. The components of this system generally include a game module 210 which has access to a database of images 205 for creating a set of epicts 215.

The images 205 can be derived from a number of sources, including community artists' contributions, pictures/graphical content contributed by members, and other image data automatically retrieved from online image repositories (e.g. such as from the Google image search engine). In some embodiments the images could be linked from member's other social networking pages (e.g. Facebook, Myspace, etc.), online photograph accounts (e.g., such as Flickr, Picassa). Details of such compilation are described below in connection with FIG. 3A.

Returning to FIG. 2, the game module 210 includes a number of components, including an image library 220, a tabulating module 230, a

presentation engine 240, a synthesis/suggestion engine 260, and a speech recognition module 270. An advertising module 280 can also be incorporated if needed. Each of these routines is preferably implemented as one or more software routines adapted for executing on an Internet accessible server, and capable of interacting with input from client browsers, back end databases, website pages and other similar processing/data resources.

The aforementioned routines are specifically responsible for supporting an Internet website page 250, which includes a number of features and functions for interacting with users of an online gaming site. For example the gaming page 250 could include a set of challenge words/epicts 290; a set of ratable epicts 294, and a community voting section 296. Each of these is discussed briefly here and in more detail below in connection with FIG. 4.

In FIG. 2, the challenge words/epicts 290 represent a set of words - to be drawn by contributing artists and a set of epicts - drawings to be guessed at by other participants. As seen below, selecting this feature allows the member to either invoke a drawing canvass/tool (to create an epict for a specific word) or invoke an image presentation screen (to guess what word is appropriate for an epict concept). Both of these functions are described in more detail below.

The ratable epicts 294 feature allows members to examine specific epict-concept pairings, and rate them on their artistic/creative merit. Thus, for example, this section of the site may be used to view specific artistic renditions of particular concepts. Members may be encouraged or requested to contribute epicts on particular themes, subjects, objects, etc. The ratings are then captured and compiled for community perusal and other purposes described herein. A number of different data collection schemes exist for this purpose and could be used for such purpose, including conventional polling software.

Furthermore the gaming page may include options and features for presenting the various tabulations accumulated by the site for user entertainment. As an example, particular epicts, artists, concepts could be recognized, along with top N lists and the like.

It will be understood that all of the above applications (challenge

words/epicts 290, ratable epicts 294, community voting 296) and others could also be implemented by members on an individual basis on their respective web pages. For example the feature could be implemented as a separate application for inclusion within pages of a social networking site, in the same way that Facebook users can incorporate other games or features on their profiles or data feeds. This would allow the concepts of the present invention to be perceived and disseminated to a wider audience.

As seen in FIG. 2, the epicts 215 are preferably stored according to concept, artist, etc. to create a master community database of accessible image content. Each epict is preferably tagged with an artist name (if available), one or more concept (word) tags, and other data described below.

The individual modules responsible for carrying out the main functions of the invention are now described in more detail in connection with FIGs. 3A – 3F.

A preferred embodiment of an image library builder module 320 shown in FIG. 3A includes a number of components for constructing a database of epicts. As seen there candidate images 305 for epicts can be received either through manual contributions or automatic selection from a variety of sources, including Internet collections, private collections, artist solicitations, artist submissions, etc. Candidate concepts 306 can be similarly received manually (through member/community explicit contributions) or through automatic collection/generation from online resources such as dictionary and encyclopedia references. In the latter case, local/topical themes (regional events/happenings) or contemporary themes (holidays, seasonal events) may be employed to augment a list of concepts for artists to consider. Other sources of such data will be apparent to those skilled in the art.

A library/content builder routine 321 retrieves and processes these image and concept/word contributions. The native image data 322 is examined to see if it is compatible with a presentation engine (described below) format, and, if not, it undergoes further formatting treatment by a routine 323 to convert it into acceptable form. A product currently offered by Studiomee titled “Pocket Artist” provides this type of functionality, and other similar products could be used. The

Pocket Artist product and Pocket Sketch products are available from the iTunes app store. A similar feature is offered by Sketchmyphoto also available from their website.

For example in some embodiments of the invention an epict may consist not of artistic drawings, but solely of an actual photographic image of an object, such as a bird in a tree. The image file may be filtered and reduced (in terms of visual features) to render a simplified version of the image that can be broken down into discrete components. For example all the background elements of the image could be stripped out to show only the bird itself. Then the image could be divided – logically or physically – into distinct regions that are further reduced in complexity, so that, for example, only basic features and outline of the shape of the bird remain. These basic features thus make up and are then used to synthesize the image in later renditions of the epict. Various forms of conventional picture processing software are capable of this type of operation and could be used for this purpose. For example the Adobe Photoshop Elements software includes several image "filtering" features (for example the "poster edges" and "fresco" look found under the artistic category, and several aspects of the sketch category (photocopy for example)) that provide this type of capability. The advantage of such format is that it can take up less space and is somewhat more consistent in terms of giving the game an artistic look. An example of an original JPEG photo and an artistically formatted counterpart is shown in FIG. 3G. Even in the black and white reduced version the image is still recognizable.

Nonetheless it is possible to use simple JPEG (or similarly compressed data formats) for visual images if desired. Again the precise format of the epicts will be a function of the specific design goals and is expected to vary from application to application.

The images are also processed by an image supplementation module 325 which is used generally to locate other associated and relevant content for the candidate image as part of the pictorial game. For example metadata routine 326 is adapted to identify/extract appropriate content tags. The content tags represent correct responses or answers that may be associated with the epict in

question. For example a picture of a cat may be tagged with the descriptors "cat," "pet" "purr" and so on. In some cases such data may be explicitly provided, in others it may be determined by reference to various software tools available on the market for identifying the nature of objects shown in an image.

A semantic supplementer routine 327 examines the tags/descriptors and other concepts and determines other semantically related concepts and words. Thus for example, in the above example, the "pussycat" and "feline" may be determined (with reference to a reference semantic tool such as WORDNET) to be semantically related to "cat." Based on such association additional text tags could be appended by a routine 322' along with other native or processed supplemental image data associated with the content of such additional text tags. Thus, for example, if image data already exists for such semantic relatives, it can be associated with the candidate epict in question for use in the game.

The completed epict is then stored in a primary image database 324, along with the other associated metadata/parameters noted above. A secondary image database 324' contains related images that can be accessed/related as desired to the entries in the main database. A database interface 328 is used to query and access epict content as needed by other routines as described below.

A preferred embodiment of an epict record 329 is also shown in FIG. 3A. Each epict is preferably coded with the following parameters:

- a unique image ID (a numerical designation of any appropriate length);
- an image name – (a listing of the appropriate content tags, descriptors, etc.);
- image components (some images may be stored in a format where the artist's rendering of the image is journaled into distinct components; in other cases the contributions can be automatically rendered into components by formatting routine 323);
- image component timing (in instances where multiple components exist, timing information can be provided to indicate what component should be drawn first, second, etc., and at what speed);

- related image components (as noted above, a pointer to other secondary images in database 324' that can be associated with the epict);
- Origin ID (a reference to an artist, data source or the like from which the epict was derived)

The preferred approach uses a scheme in which the electronic image is presented in a visual sequence that substantially tracks a predicted rendering of such used by a human composer. In other instances where the content is not based on a human artist, the image can be presented visually as the system predicts a human artist would render it, or in a manner that is logically related to the subject matter of the image.

Those skilled in the art will appreciate that other parameters can be included as well depending on the application and desired functionality. For example some epicts could be tagged with automatic metadata (geocoding, time, etc.) as desired, along with additional pointers to appropriate musical relatives (as noted above).

A preferred embodiment of the process used in a pictorial game image presentation engine 340 is depicted in FIG. 3B. As alluded to earlier, the present invention can be implemented in various forms. For example, in an automated mode, the epicts can be drawn from database 324 and presented within a portion of an interface for a webpage to be reviewed and evaluated by individual members. The members preferably have the ability to select (and/or subscribe to) the epicts by category or topic. The members could then participate in a solo-type interaction with the game through these individual epicts. Individual members may elect for the epicts to be presented on their respective profile pages as a customizable widget in accordance with one or more programmed themes of their selection. For example a particular user may direct the epict engine to randomly select topics based on the news of the day, so as to cause the system to dynamically present epicts directed to such concepts on his/her site as such content develops over time.

In other applications nonetheless it may be desirable for members to

participate in epict presentations/guessing in a team based mode. In such instances members may elect to join and sign up as a team in accordance with a set of rules as shown at 341. Invitations and sign-ups can be implemented with any number of known tools. The rules may be based on the particular game chosen so that for example teams may play directly against other teams, or in some cases, may simply compete against a reference set of epicts. Other formats are of course possible. The rules may further specify scoring and other game options shown below as well.

The game is then initiated at step 342 for the participants in question. The participants may enter the game directly by reference to a game ID, an authorization token or similar mechanism known in the art. In one embodiment the teams are expected to review/create a number of separate epicts on a rotating basis. That is, a first team would create a first epict for a second team to guess within a certain time period, and vice versa. The game can consist of a plurality of rounds (again selectable by the participants) in which different epicts are provided to the respective teams. The game final scoring can be based on any desired mechanism, such as by determining the most correct guesses made for a set of N epicts. Other rules and variations can be used as well.

In a preferred embodiment the game members can view the epicts on their respective client devices (which may be a PC, a cellphone, a PDA, a game console, etc.) in accordance with image data/game formatting requirements at step 343. As noted earlier the participant may also be shown additional supplemental images derived from a main epict to assist in guessing the concept in question. For some embodiments of the games the teams can be presented epicts that come from a common library database 324, while in others the epicts are created during game time by the participants themselves. Again other modes are contemplated by the present teachings and the participants can be given latitude to select a particular rule set.

In those cases where game participants are required to create their own epicts on the fly, a variety of different software tools can be used to assist them as needed to comply with a game selected concept that they are asked to

compose. These types of tools are again well-known in the art; one example is a software application known as Graffitti that is offered on the Facebook site, and which presents a graphical interface for creating drawings for community review. *See e.g.* (h-t-t-p://)apps(dot)facebook(dot)com/graffitiwall/ and h-t-t-p://apps(dot)facebook(dot)com/graffiti/ An adaptation of this product also allows replay/ journaling features and this function could be incorporated as well with the present invention. Thus this product (or something equivalent) could be used both for creating and storing epicts for later use (as seen in FIG. 3A) or for permitting participants to create content as required for a particular game. In the case of using "canned" epicts the individual replay components and timing could be stored as part of epict record 329 as noted above. For example there may be variable parameters on how quickly the epict is drawn. That is the ratio of how much drawing time is involved relative to a maximum time allowed for recognition of the image can be adjusted based on a desired game difficulty. Another example of a drawing tool that may be appropriate for the present invention is described in US Publication No. 2007/0016689 incorporated by reference herein.

On certain platforms, such as the iPhone, additional sensors could be exploited to render the image in different modes/styles. For example the iPhone contains motion sensors which can be used to determine the attitude of the device. The epicts could be encoded to have motion based components that are only expressed as the device is moved. For example, a picture of a tree could be coded so that it moves in response to the phone being moved. This could help denote the concept of "wind," which is otherwise difficult to conceptualize in a static drawing. A picture of a hockey puck could be shown in different positions as the device is moved, to denote the concept of sliding, and so on. A series of different images, representing scenes active at a different orientation/rotation angle of the device, could be used to denote the pouring of water, such as from one container to another. The use of such variable position technique would be most advantageous in connection with concepts involving verbs, actions, etc. The possibilities are endless in this respect, and other examples will be apparent

to those skilled in the art.

The artist participants may similarly be given clues/cues and other forms of explicit assistance to help them create the pictorial images. The suggestions may be as simple as providing additional semantic word cues that are perhaps easier to depict visually. Alternatively they may be as complex as providing specific objects as templates to work from. For example for a dog the system may provide a basic body of an animal with four appendages, allowing the user to construct the rest of the image on his/her own. This technique can help solve the case of "drawing"/artist block for people who don't know what to use as a starting point.

As alluded to above, some embodiments may benefit from the inclusion of musical clues that are associated with the epict, and this feature can be further used during the presentation to assist in decoding the images.

At step 344 the responses are logged from the game participants (in the form of guesses, epicts, etc.) It will be apparent that in some cases the raw ratings data feed to be tabulated for the game can originate from a standalone architecture (see data feed 140) as described in FIG. 1 above. Moreover it should be apparent that the participants do not have to be physically in the same location to participate as a team.

Again in FIG. 3A, the participant winners and associated prizes are determined at 345 by a decision software module using any desired set of rules, i.e., such as by guessing the exact word (topic/concept) or a semantic variant as noted below. At 346 the game status/score for each participant team is adjusted as well in accordance with the rules elected for the game. The performance of the participants/teams/epicts/artists is then logged and tabulated at 347. This data can then be published as an update or feed if desired to search engines, profiles and other social networking sites.

The contributors of the content (artists, image sources, etc.) are then recognized at step 348 based on the use of the epict and/or a rating provided therefore. In embodiments of the game where some form of accounting is given to such entities a database can be maintained of credits or funds for each

contributor.

As another option the presentation engine can use a collaborative filtering or corroborative filtering routine to identify other epicts or artists that would be of interest to the game participants based on their rating or adoption of an epict/artist. In other words, the system can correlate epicts based on artist, content tag, score, etc., so that participants can be shown other examples of epicts likely to be of interest based on their scoring for one or more game epicts. Similarly the participants can be given information on other artists likely to be of interest based on scores given to a particular contributor by other participants. This information could be compiled on a topic by topic basis as well for further refinement. Recommendation routines are well-known in the art and can be modified to accommodate any and all of the data types referenced above for the epict entries 329.

Again all of the feedback data above, including scoring can be used in the architecture of FIG. 1 above as well.

The right hand side of FIG. 3B shows other game entry points for the presentation engine 340 captured from a game site (or participant) webpage. For example image challenge selection logic 350 is responsible for selecting a particular epict to be used within a particular game or widget. To make this determination it can examine collective community ratings for one or more epicts, consider contemporary/local topics, etc. to select one from database 324. In other embodiments the epicts could be rotated or randomized on a topic basis, an artist/source basis, etc. In still other applications the challenge selection logic 350 can make use of geospatial information to tailor the content of the challenges to a particular location where the user happens to be (in the case of a portable application). For example, in a baseball stadium the challenges could be geared to guessing the identity of players, and so on.

In some applications a CAPTCHA challenge system (not shown) could introduce visual content to be reviewed by humans to determine what appropriate tags/concepts are presented for the image in question. This information can then be used to augment a library of challenge test images. For

example the challenge system could determine that an (intentionally visually distorted) image A is nonetheless identified as either X or Y by 90% of the population, thus making is suitable for inclusion in a CAPTCHA system. The image could be re-presented at various times to different participants/Internet viewers – and with different levels of degradation – until it is no longer recognized by a certain percentage of the population. This process could be repeated iteratively – with progressively degraded versions of the image - as needed to meet the CAPTCHA system's requirements. The recognition times could also be measured for each iteration. In this manner the present invention can act as a form of testing ground for these types of challenge systems.

An optimized set of image challenges could be presented on an iPhone like device as part of a CAPTCHA to gain access to accounts, data, computing resources, etc. The user would be asked to provide the identity of the image either through a keyboard, or, if desired, audibly using speech recognition. The latter affords an additional layer of protection against would-be fraudulent accesses.

In still another embodiment, a CAPTCHA challenge for an iPhone type portable device (capable of motion/orientations sensing of the device) can be based on providing hints or clues to a user on how to move or orient such device. That is, the CAPTCHA could provide either text on a display, or audible instructions to the user on how to manipulate the portable device, such as rotating it to the right, to the left, in a complete circle, picking it up and putting it down N times, shaking it in different directions, etc., etc. as part of a CAPTHCA challenge. For example the current version of the iPhone has a built-in compass; the user could be asked to orient the needle to point to a particular location (N, NE, E, SE, S, SW, W, NW and so on.) In other instances the user may be asked to move the device so as to cause some action in a scene, such as to make water pour from a cup, and so on. Thus the manipulation of objects within the screen can be done as needed in a challenge based on sensing the movement of the device.

In other cases the CAPTCHA can include a visible image indicating the

movement to be imparted to the device, such as showing a person rotating it 90 degrees, picking it up and down, moving it in a figure 8 pattern, etc. Again the image could be progressively revealed or degraded if desired. Skilled artisans will appreciate that there are many options for the physical manipulations and the invention is not so limited.

The touchscreen on an iPhone like device could also be integrated into the challenge so that the user is required to physically touch or manipulate icons or other objects to achieve some result. For example the user could be asked to arrange a set of letters in a sequence to spell a particular word in a particular location on the screen. Alternatively the user could be asked to orient an object into its correct position by moving it with their fingers such as described generally in the article "What's Up CAPTCHA? A CAPTCHA Based On Image Orientation" by Gossweiler et al. (WWW 2009, April 20–24, 2009, Madrid, Spain) incorporated by reference herein – or by moving the device. Those skilled in the art will appreciate that other physical manipulations could be employed, including blowing into the phone's microphone (as is done in some games), etc. The challenges could be used, as noted, for accessing computing resources, accounts, etc., and even for applications such as unlocking/accessing the portable device (i.e., like a secret handshake).

Returning to FIG. 3H, an example of the types of degraded images is shown therein. The same image as FIG. 3G is shown with different degrees of pixelation, again using the basic operational tool available with Adobe Photoshop Elements. At one level of extreme pixelation (created using a variable colorhalftone filter feature) the image is not recognizable; but at lower levels the image can easily be distinguished as a bunkbed as in the original. Similar effects can be achieved using filters such as crystallize, mezzotint, mosaic (and several image noise and threshold options) all of which can be experimented with using routine skill to devise samples which are recognizable by humans but (preferably) not machines. For example FIG. 3J shows an original JPEG image that has been subjected to various levels of noise filtering, either through removing noise (at different pixel levels) or addition (at differing percentages). It

can be seen that at some thresholds a human would have a difficult time perceiving the object in the image, but there are clearly levels at which the image is decipherable. The images therefore could be subjected to different levels of pixelation/signal processing treatment on the fly, or they could be stored as successive original files in the different degraded forms for ease of computation/presentation.

At step 351 the selected epict is presented on the game website (or member widget) in accordance with a set of game rules applicable to such site. User ratings and responses are collected in a similar fashion at step 344 as noted before for the team embodiment.

In this manner the presentation engine 340 can accommodate and incorporate content contributed by participants across a wide variety of input platforms and game environments. All of the aforementioned steps in FIG. 3B can be implemented using one or more software routines using ordinary skill in the art based on the present teachings.

FIG. 3C illustrates a preferred embodiment of a pictorial game tabulating module 330. This module is generally responsible for compiling data and scoring for the epicts, participants, teams, etc., publishing results and accounting for results of epict games.

As seen in seen FIG. 3C, a routine assigns each pictorial game an ID 331 to identify it uniquely for tracking purposes. For each game, a set of epict IDs 333 and participant IDs 334 are maintained. The epict scores and participant scores are further stored by a routine in respective databases 332 and 332'.

A routine 335 also calculates epict and participant scores. The scoring can be based on any number of criteria, such as in the case of an epict, the fact that it was recognized, the amount of time required, what rating was given to it, and the mode of presentation used (static or dynamic replay). The participants can be scored in a similar fashion, such whether they successfully recognized an epict (by identifying one or more correct concepts), the amount of time required by the participant to make the guess, what rating was given by the participant and the mode of presentation used (static or dynamic replay). These are but

examples of course, and other types of data could be collected as needed.

A separate routine 336 also calculates author/source scores to be stored in an artist database 332". This scoring can be based on the same parameters described above, so that, for example, artists are rewarded based on positive ratings given by participants.

The results from the pictorial games (whether they be home based, or based on team games, or derived from Internet sites, widgets, etc.) are published as desired by a routine 337. The results may include other aggregate calculations, including image difficulty rankings, image ratings, group image ratings, author ratings, participant ratings, team scores, game scores and similar data. Again the results can be made available to any of the platforms from which the game originates, including an online gaming site or social network profile, home based console system, etc.

The format of the data records maintained in the databases is shown generally in FIG. 3C as well. For example for an image database 332, an epict record 338 may include the following fields:

- Image ID (as noted above)
- Presentation mode (whether it was displayed statically or using a slow motion replay)
- % identified within time (number of participants who correctly guessed the concept of the epict divided by total viewers)
- Mean recognition time (RT) (the average and/or mean times for recognizing the epict)
- Standard deviation RT (basic statistical data based on recognition times)
- Ratings Score (average score across all participants)
- Difficulty Rating (numerical rating given by participants to indicate how hard it was to decipher the epict)
- Demographic data (information about the participants)

Note that the above is an example of an aggregate record. In addition some of the above fields (where applicable) may be compiled on an individual basis, with each game/rating of the epict given a unique record. Other fields could be

maintained in such case within database 332 or an associated database, for example the actual time may be recorded for each epict evaluation. The types of data collected could include other parameters as well.

In addition for the participants, an aggregate record 338' stored in database 332' can include:

- Participant ID (a numerical designation of any appropriate length);
- Images Perceived (which epicts were evaluated)
- Images Recognized (which ones were successfully identified)
- Mean Recognition Time (basic mathematical computation of times required by participant to review epicts)
- SD (RT) (as above)
- Ratings Score (as above, on an epict basis)
- Favorite Authors (list of artists by ID)
- Image IDs authored (list of epicts contributed identified by epict ID)

As above, note the data/fields are for an aggregate record. Some of the above fields (where applicable) may be compiled on an individual basis, with each epict rated given a unique record by score, actual review time, etc.. and are maintained within database 332' or an associated database. The types of data collected could include other parameters as well.

Finally, for the individual contributors/artists, the following type of aggregate record 338'' could be maintained within database 332'':

- Author ID (as above)
- Image IDs (as above, indicating which epicts created by this artist)
- Average Images Recognition Score (compiled across all epicts)
- Mean Recognition Time (across all epicts)
- SD (RT) (across all epicts)
- Author Score (an average rating provided by participants)
- Working on image challenge (indicating what contest they are working on)

As above, note the data/fields are for an aggregate record. Some of the above fields (where applicable) may be compiled on an individual artist basis,

with each artist having a unique record by epict rated, so that an actual epict score, review time, artist score etc. are maintained within database 332" or an associated database. The types of data collected could include other parameters as well.

While not expressly shown, it should be noted that team scores/data can be maintained as well in essentially the same fashion as for individual participant scores noted above. The data for such teams can be published as desired as well to appropriate authorized entities.

Again it should be noted that these data fields may be varied from application to application. It may be desirable to compile averages rather than means in some cases, and so on. The particular parameters will vary depending on the desired functionality. All of the above data can be published in appropriate form by routine 337 in any number of different locations, formats, etc., for participant enjoyment.

FIG. 3D illustrates a preferred embodiment of a pictorial game synthesis-suggestion module 360. This feature of the invention is responsible for assisting game participant artists to compose epicts, and to facilitate presentation of so-called preformed/canned epicts to participants.

As seen in this figure, based on a game ID 331 a determination is made whether the game is to be run in an automatic or manual mode. In the former case image/epict IDs 332 are obtained automatically from a database 324, while in the latter case a manual mode 361 requires a game participant to create the epicts in accordance with the details noted above (see FIG. 3B).

In either event the game participants have the option at step 362 to elect a supplemental presentation. This feature, as noted above in connection with FIG. 3A, allows for additional secondary images and other cues(from database 332') to be retrieved at 364 and presented as part of the reference epict at step 365. In a manual mode this information can be hidden from the participants and shown only to the artist to assist the latter in formulating appropriate images. If the supplemental option is not elected the image data is presented at 363 in accordance with any component/timing information associated with the epict.

It should be noted that the automatic mode noted here would be the default option for any epict games/presentations made in connection with a website/web profile implementation since artists are typically associated with team play.

In the event a manual mode is used at 361 for the game the artist can nonetheless invoke a suggestion option for the concept at 366. If the user selects such feature the game play routes through the same steps above, except that in addition to the supplemental option features the designated artist is given specific suggestions on images that could be drawn to communicate the concept in question. If the option is not chosen the image is simply presented in a normal picture mode at 367.

All of the aforementioned steps in FIG. 3D can be implemented using one or more software routines using ordinary skill in the art based on the present teachings.

Next, FIG. 3E illustrates a preferred embodiment of a pictorial game speech recognition module that can be used in some embodiments of the invention. While this module is depicted in the context of a pictorial game it will be apparent to skilled artisans that it can be used in connection with any number of online games.

As noted above in FIG. 3B, participants guessing on the concept embodied in the epict typically provide input on such using a keyboard or mouse. Another option however is the use of speech data from the participants. This feature has the advantage of most duplicating the prior art game experiences and frees the participants from the task of being distracted while analyzing the image data. Other benefits are apparent as well, including the fact that the participant voice prints collected by the module can be used for authentication and access verification as well.

The recognition module 370 executed two basic procedures: a set up mode 375 and a game mode 380. In the first mode, a routine solicits participant voice inputs at step 376. This can be done in any conventional fashion, including by collecting test words/phrases, examining for prosody, and accounting for background noise attendant at the participant's site. In situations where more

than one participant is present at the client device for presenting guesses a "crowd" mode can be employed. Furthermore depending on the processing resources available to the participant they may elect to have the bulk of the speech recognition performed by a remote server associated with the pictorial game system. Other options will be apparent to those skilled in the art.

At step 377 a set of voice prints/templates are thus developed for each of the individual team members – in the case of a solo game of course, only the user invoking the game need provide a template. If a number of players are present at a particular location, it may be desirable to provide some form of amplitude compensation/normalization to account for different participant speaking volumes.

An optional step 378 can be used to confirm that the system is accurately discriminating between individual participants. Each participant would be permitted to speak a test phrase, for example, and the system would indicate which person it believes gave the utterance. In the event the system needs further training the procedure could be repeated.

During a game mode 380, the speech recognition module receives metadata for one or more epicts at step 381. This metadata includes a number of content tags describing the object of the epict, and may include a number of different semantically related words.

Based on these "answer" responses an appropriate grammar and/or customized acoustic model can be loaded for the speech recognizer at step 382. At this point therefore the speech recognizer need not be capable of recognizing substantial numbers of words. In fact it need only focus on a handful of words, and thus it can be substantially reduced in computationally complexity because it can ignore all other inputs that do not match one of the appropriate answers.

During step 383 the SR module listens for answers input by the various game participants. In the case of team members distributed across multiple locations the data input to the SR is thus received from multiple sources. In such instances it may be desirable to allocate a dedicated SR resource to each channel to improve performance. The SR module then recognizes and time-

stamps each accurate recognition at step 384 to give appropriate attribution to the first participant accurately guessing the epict concept.

Nonetheless even in "crowd" scenarios where the participants are at a single location, recent advances have made it possible to make reasonable resolutions of individual speakers who are speaking simultaneously. See e.g. h-t-t-p://technology(dot)newscientist(dot)com/article/dn14105-robot-asimo-can-understand-three-voices-at-once(dot)html incorporated by reference herein. By using a similarly configured console or game platform with appropriately located microphones a SR module could distinguish between multiple human speakers articulating their responses at the same time. Other known tracking techniques for identifying the correct speaker can also be employed, such as by using video and other input.

Upon receiving a correct response the routine would identify a winner at step 385. This feature allows the participants to express their answers rapidly and in free form without the need for slower, more cumbersome data entries. It is expected that this form of input would be far more preferable in embodiments of the invention where individual players desired to play the game over a portable device, such as an Iphone or similar device that includes speech capability built in. In such instances the grammars/dictionaries can be downloaded directly to the device (since they need only pertain to the universe of words associated with the concepts) to allow untethered (non-network) play in situations where the recognizer functions can also reside on the portable device.

FIG. 3F illustrates a preferred embodiment of a process employed by a pictorial game advertising module 390. This process basically can be an adaptation of a conventional keyword auction based algorithm such as the type used by such entities as Google, Yahoo!, Microsoft, etc. In this instance, therefore advertisers are permitted to bid on a keyword or topic basis at step 391. In the present invention the keywords/topics are preferably based on the epicts and related metadata (concepts/words and semantic relatives) stored in databases 324, 324' (FIG. 3A). Thus the advertising stock 392 is preferably served on an epict by epict basis at step 393. In this fashion a content based

matching system can be implemented between advertising stock and the content of the epicts.

Since it may be undesirable to serve ads which have content that may communicate (and thus spoil) the epict recognition process by players (since it may be related to the topics/concepts of the epict), it is possible to switch off the serving of ads as noted at step 394 until the epict has been recognized or the recognition time has passed. This would avoid the problem of players being given hints as to the identity of the epict. Other techniques could be used.

At step 395 the ad is served based on the advertiser's stock 392. It should be noted that in some cases it may nonetheless be desirable to incorporate advertising while the epict is being drawn as a mechanism for assisting the recognition process. In this embodiment, the ad is in fact assisting the player to solve an aspect of the game, a feature unlike other advertising modules used in the art.

This concept could be further enhanced by integrating other user contributed content directly into the ads. For example one mode of the game, as noted above, involves a suggestion component intended to assist players determine epict concepts. An ad which directly incorporates an epict determined to be related to (or suggestive of) the epict in question could be used to present the suggestion explicitly on the participant's screen while they are playing the game.

This collaboration between advertisers and artists can be extended at step 396 so that particular artists/epicts can be essentially "sponsored." For example, as seen in FIG. 2 (epicts 294) and FIG. 4 (epicts 440) the identity/stock of epicts chosen for presentation within the web pages can be determined by advertisers who match their advertising stock to one or more epicts that they want to be associated with. In this respect, therefore, the epicts effectively act as web assets (akin to a web page in an Adsense campaign) that advertisers can bid to be associated with. By allowing advertisers to bid on specific assets (instead of queries, or web page content) the invention provides another angle for monetization of such assets and opportunities for advertisers.

The advertisers could in some cases be allowed to introduce their own proprietary/customized epict content as well (to the image library) to enhance the appearance of the game and increase their exposure. They may also contribute their own list of concepts, topics, etc. to be used as part of the game. Combined with the dynamic serving of ads related to an epict the invention allows for advertising to be used as an integral and dynamic component of an interactive game.

FIG. 4 depicts a preferred embodiment of a pictorial game website 400 that embodies aspects of the present invention. Specifically, this figure shows a an example of a main web page that would be seen by Internet users accessing a game site. It should be noted that many conventional aspects of such types of pages have been omitted to make the description of the invention clearer.

In particular, the game site offers users a chance to set up and initiate a pictorial game with all the features and functions described above in connection with FIGs. 2 and 3A to 3E. To wit, different portions of such page as presented within a client GUI interface include selectable URLs which invoke routines to permit the user to:

- Start a team game (option 410) – allows for a team to start a game against another team using the procedures noted in FIGs. 3A – 3E;
- Start a solitaire challenge (option 411) allows for an individual to start a game using the procedures noted in FIGs. 3A – 3E;
- Submit a challenge word (option 412) – used for allowing members to offer concepts/words to be expressed pictorially by other members;
- Watch a game (option 415) – allows a member to act as a form of voyeur and observe a team game by topic, locale, team name, etc.;
- Upload an epict (option 420) – allows a user to submit their own pictorial content and descriptor tags for the entertainment of the community;
- View top N lists for the community/site (option 425) – allows users to see the highest rated epicts, the most difficult epicts, team

ratings, artist ratings, participant ratings, game scores, etc.; the difficulty of epicts can be determined by computing a total number of times the epict has been presented versus how many time it has been recognized; artist ratings can be similarly computed; the most difficult concepts to recognize (either individually or by topic) can also be compiled

- Enroll a team (option 430) – allows a user to set up a new team for play on the site;
- Find teammates (option 431) – allows user to find other persons to be part of a team;
- Find/rate an artist (option 432) – allows a user to search for specific artists by name, topic, concepts ,etc. and rate them if desired
- Search/Rate epicts (option 433) - allows a user to search for specific epicts by artist, topic, concepts ,etc. and rate them if desired
- Review/guess on challenge epicts (option 440) – allows users to pick specific epicts/words to evaluate and play with in accordance with game rules.

Again not all of these options are necessary, and other options could be presented and offered as well, and the particular implementation will vary according to game specifications and requirements.

Some embodiments of the pictorial game can include a rating module 500 as seen in FIG. 5. The purpose of this module is to allow teams 510 and individuals 515 to access and play with a set of benchmark epicts (S1, S2, ... Sn) 520 and evaluate their performance relative to such standard for competitive purposes. The benchmark epict sets can be selected by human editors, or automatically by rating module 500 by evaluating ratings/performances of epicts compiled by tabulating module 230.

In the former case, a human editor may select a number (X) of epicts from database 324 based on a ratings list of X different topics. In the latter case the identity of the individual epicts within the sets is determined by reference to some

threshold rating for score, difficulty, etc. In either scenario the epicts are preferably selected to expose participants to a cross section of the available inventory.

The participants then work through one or more of the epict sets (e.g. S1) and then have their times/accuracy evaluated by a routine 530 such as that described above for FIG. 3A. Their scores, and the ratings (if provided) for the epicts are then compiled by a routine 540 that, again can be similar to that already discussed above.

This aspect of the invention therefore allows members (and teams) to evaluate themselves relative to some test benchmarks for competitive recognition. The results can be published, as noted earlier, for the entertainment of the overall community, to individual profiles, the main game webpage, or other social networking sites.

FIG. 6 illustrates a preferred embodiment of a variant of a rule set 600 used in a pictorial game. Basically this figure describes a format that can be employed in some variants of the game to make it more interesting for some participants in team play applications.

In this embodiment a challenge word/concept is selected for a first team (A) by a routine at 610. This may be done randomly, by topic, or by another rule choice opted by the members.

At 615, and without letting the member of team A see such word, the members of team B are allowed to visualize various epict alternatives selected by the system for presenting such concept. The alternatives may be selected randomly, or, alternatively, may be selected based on a variety of scores/ratings for such epicts. The latter may be used, for example, to provide a reasonable cross section of challenges ranging from easy to difficult.

The members of team B can then (optionally) vote to eliminate (or select) one or more of the alternatives to be used by the system for team A at step 620. In some variants of the games the team members may be allowed to see the difficulty ratings of the epicts as measured by the performance of other individuals/teams.

During step 625 the final epict is then selected for team A based on the selection made by team B. In some cases it may be desirable to incorporate a randomizer at 630 to select in situations where the selection is not specifically defined.

At 635 the module further allows an option that gives team B yet another opportunity to impair or handicap team A's chances of success in decoding the epict. In particular the routine arbitrarily selects aspects/components of the image which can be selectively removed from the epic to make it more difficult to decipher. Thus team B is again presented with degraded variants of the epict to be shown to A, and they then make a final selection which is presented at step 640.

As an ancillary feature the teams (or individuals for that matter) can make use of a prediction component 650 which allows for review of epicts and their associated concepts to provide a prediction or vote as to whether such epict was recognized by some (system definable) percentage of the community, and/or a prediction of what rating such epict garnered. For example the module may ask the participant a simple yes or no question about whether the epict was recognized within the allotted time by more than 50% of the population? (or more than 75%, etc.) The module can then further request the participant's estimate of the rating given by the community to the epict. The participants can then see how close or far off their predictions are for the epict in question. This aspect of the invention therefore further allows participants to glean insights into the collective thinking of their fellow gamers.

These rule variants are not necessary of course, but provide an additional element of play that may be attractive to some participants. Other examples of such variants will be apparent to skilled artisans from the present teachings.

FIG. 7 depicts a preferred embodiment of a game screen/interface 700 used by a participant in a pictorial game. This screen may be part of an interface that is presented within a conventional browser (or similar Internet browsing utility for a handheld device or game console) to interact with game websites. This same interface may be used as well, as noted above, in connection with user

profile pages and the like maintained at social networking sites.

Within the interface the participant is shown an electronic canvass 705 in which the epict is presented visually. Again, the epict may be shown all at once, or it may be staggered as noted earlier. The canvass is preferably scaled in size so as to allow participants to visualize the image without noticeable compression, artifacts, etc.

At portion 710 the user is allowed to enter his/her guess of the object, by keying in an answer, selecting an answer by mouse, or speaking (in the case of a speech recognition embodiment). Other forms of input could be used as well (touch for example).

Section 715 of the interface informs the user of his/her progress in the game. For example the game may consist of a set number of epicts that must be completed to satisfy a game objective, and a time factor may be introduced as well. The participants' score is also displayed at 716.

A time remaining for guessing the epict is shown at 717 in any convenient visual form (digital, analog, hourglass, etc.) and in accordance with user preferences for the interface. In fact, preferably all elements of the interface can be scaled, arranged and formatted in accordance with a desired aesthetic of the user and to give a sense of customization.

The category selected by the user is identified at region 718 of the interface.

At portion 719 of the interface the game may display the answer if the user has selected it correctly (a semantic equivalent may be acceptable). In some instances it may be desirable to "recognize" partial correction portions of a user's answer, so that if he/she inputs "cruise liner" the invention would nonetheless accept and display the "liner" part of the provided answer as acceptable. This acts as a further clue for the participant that the prefix must be different. Other variants will be apparent to those skilled in the art.

The stock of epicts presented within interface 700 can come from multiple sources, including artist submissions 720, and user submissions 730. These are differentiated primarily on the basis of how the origin of the image, rather than

any significant technical basis, since both can be accessed from a database 324 (FIG. 3A). Nonetheless the process by which epicts come into existence can be used to augment the accompanying metadata and presentation mode for the participant.

In a first case, artist submissions 721 preferably consist of images created by original artists using one of the drawing tools mentioned above. In such cases the original artwork 722 is selected, and then processed by a routine 723 in the manner noted above for FIGs. 3A and 3B. Thus the image is preferably presented all at once - in a static mode – or using some form of timing, as in a replay mode based on using an actual artist rendering time. The latter could be accelerated or slowed depending on other game parameters.

In other embodiments the epict could be presented in a degraded form (as noted above) that gradually improves with time, based on a variable number of iterations, time, etc. For example the image could be given incremental improvements every 10 seconds until a final image is reached. The participant's score could be weighted according to how quickly they decoded the image (i.e. what level of degradation).

In similar fashion user submissions 731, which may be basic JPEG images, can also be selected at 732 as a form of epict. This type of content is perhaps easier to contribute since many users have electronic cameras, tools for uploading images, online picture accounts (Shutterfly, Flickr, etc.) that can be tapped into for content. The images are preferably pre-treated (see discussion for FIGs. 3A and 3B above) to render them into more artistic form, and/or to create different levels of degradation as noted above. Alternatively, in some embodiments it may be possible to impart this type of visual appearance on the fly within the interface, since sufficient time may be given between iterations to permit this degree of processing. In any event the images are presented, again, using one of the modes above, except of course that in such instances an original "artist" mode would not be possible in the case of a photograph instead of a drawing. Nonetheless it is possible that an artistic rendering could be mimicked in some cases using additional image processing software.

For some applications it may be desirable to simply divide the image file into physical regions, and present different sets of pixels within regions on a random basis. As an example, a set of N different iterations could be used. At the first iteration, X% of the pixels are revealed. At the second iteration, an additional set of Y% of the pixels for each region are revealed, and so on. This would give the image the appearance of randomly filling in with time. Other variants are of course possible and useable with the present invention.

As with the other embodiments above, the participant can also opt to use musical hints during the presentation of the epict. In addition a hint board 750 may also be displayed within the interface to give further clues to the participant. As noted earlier, the hint board may integrate advertising as well, and the ad stock itself may form part of the visual clue, by way of images, text, music/audio, etc. Because the participants' focus may shift within the interface to pick up and detect such clue, the chances of an ad being perceived (and thus selected eventually) by the user increase dramatically. While the time is running for the epict the hint board images could also be changed if desired. In this respect the stock could be rotated randomly, or based on some programmed logic. In an embodiment where the epict deciphering is timed, the user's selection of an ad within the hint board can be used as a control signal to stop the game clock so that the participant is not penalized for viewing and interacting with an advertisement. For applications where timing is not used this would not be necessary of course.

The advertisers can then also be given options for bidding on what times their ads are presented within the hint board during game play. For example the right to present a visual hint/ad during an earlier portion of the game could be auctioned/priced at a different price than the right to offer the same hint/ad at a second time later in the process. An end-of-epict time option can also be offered, to allow an advertiser to occupy the interface for a longer period at the end of the game. Other options can also be offered, such as the right to opt in or out of an epict in which the participant was successful or not. All of these factors can be used to adjust an appropriate auction and compensation scheme.

The hint board ads could also be tailored based on a performance level achieved by the participant, and thus a predicted mood of the user. The user's mood could also be determined with reference to prosodic elements in a speech embodiment. For example a first type of ad might be shown if the user was successful in the current/prior epict, compared to a second type of ad if the user was unsuccessful. The invention can monitor the progress and performance of the user to increase (or decrease) the level of visual assistance through the hint board as needed to maintain an entertainment level for the participant. Most players will not want to play a game that is too easy or too hard, and this balance can be struck in part by adjusting the types of supplemental hints given within the interface. Again, too, the advertisers can participate and assist with such process by providing ad stock/associated epicts of various levels of explicitness for a particular concept. The advertisers may also opt to sponsor or present the musical hints and cues associated with the epict. The advertisers can then also be given options for bidding on different levels of visual/audio hints, so that the right to offer a first level of visual assistance is priced at a different price than the right to offer a second higher/lower level of assistance. Since it is more likely a participant will have a positive association with a hint that helps them solve the visual puzzle, this factor can be used to adjust an appropriate compensation scheme.

While some conventional online ads are presented in the form of a game (e.g., they require the user to interact with them, such as using a mouse) it can be seen that the hint board 750 instead behaves as a form of additional artist/participant for the game the user is engaged in. Those skilled in the art will appreciate that this feature may be used advantageously in other game environments in which it is desirable to impart clues/cues to a game player using an interactive ad.

While not shown explicitly the game can of course use and exploit demographic and other profile/behavioral data collected for participants to enhance game play. The epict database 324 of artist and author contributions can be made available to news aggregators, search engines, etc., so that

relevant content is presented to web surfers looking for pertinent information on particular concepts.

As shown in FIG. 8, in some embodiments a search engine, blog, newsfeed or news site 800 may offer accents or other adornments of a page based on epicts contributed by an artist community. For example, a Google news story about a person/place may be coupled with one or more artist caricatures of such person/place.

Similarly, in a search engine page 810, a person looking for the Tower of London may be shown an epict 815 for such as part of the search results page. As with the above embodiments, the epict 815 (preferably compressed to thumbnail size) may be combined with an ad 820 to form a new ad 825, so that the attractiveness of ad stock can be increased for a general searcher using a search engine, and the chances of a click-through increased by virtue of the additional visual aesthetic. This mechanism further allows artists to tap into and benefit from advertising dollars as they can be rewarded for their success in creating incremental benefits over conventional text only ads.

Search engine operators such as Google can thus also maintain a stock of epicts/artists that can be bid upon with a conventional auction engine 830 by advertisers 835, much in the same way keywords are bid upon in an Adwords campaign. The performance of individual epicts in clicks and conversions can be tracked as with any other keyword. This again would allow for a more efficient marketplace to acknowledge and recognize successful advertising copy contributed by artists.

The same advertising and epict coupling can be used of course in an Adsense campaign as well, so that members of an advertising network can have pages 810 supplied by a combination of text and images proven to be attractive to web surfers. Since Adsense campaigns are based on the content of the webpage 810 in question, a similar matching scheme could be done here. If desired, the ad and epict auctions could be de-coupled. That is, both would be evaluated separately for inclusion on a page, so that one matching engine would determine if the advertiser's ad is appropriate for the page, while a separate

pictorial matching engine could use a separate algorithm to match metadata for the epict and thus select it that way. For example a site devoted to fishing may be served with Adsense ads on fishing supplies, while the epict for the page may be in the form of a fishing boat, a hook, a boy fishing off a pier, etc. Other examples will be apparent to those skilled in the art.

Consequently epicts can be the subject of auctions based on keywords in queries, by which an advertiser first wins the right to present within the page, and then presents an epict along with the ad. In addition to this the advertiser may separately have to bid on the right to use a particular epict with an ad, so this could be part of a separate auction that is conducted after the first ad auction. Alternatively epicts can be presented based on the content of the pages, the search results, or the ads.

Other content sites and programs could access the epict database in question as well depending on a desired visual effect. Some music providers, such as Itunes, may offer accompanying epicts for their songs/albums for example. In auction sites, members who do not otherwise have visual images for an offering can elect to use an epict instead at nominal cost. Members of social networking sites may elect to adorn their profile pages with static or rotating epicts devoted to particular set themes, or dynamically based on topics of discussion presented within a discussion wall. The invention can thus mimic the behavior of conventional ad-serving systems which present ads based on the content of a web page. In other words, the content of a web page can be analyzed to determine one or more related topics which are then matched to one or more topics associated with image in a database of images/topics.

All of the above schemes could be implemented under a royalty scheme that rewards the artists/authors in question.

It will be understood by those skilled in the art that the above are merely examples and that countless variations on the above can be implemented in accordance with the present teachings. A number of other conventional structures/steps that would be included in a commercial application have been omitted, as well, to better emphasize the present teachings.

It will be apparent to those skilled in the art that the modules of the present invention, including those illustrated in the figures can be implemented using any one of many known programming languages suitable for creating applications that can run on large scale computing systems, including servers connected to a network (such as the Internet). The details of the specific implementation of the present invention will vary depending on the programming language(s) used to embody the above principles, and are not material to an understanding of the present invention. Furthermore, in some instances, a portion of the hardware and software will be contained locally to a member's computing system, which can include a portable machine or a computing machine at the users premises, such as a personal computer, a PDA, digital video recorder, receiver, etc.

Furthermore it will be apparent to those skilled in the art that this is not the entire set of software modules that can be used, or an exhaustive list of all operations executed by such modules. It is expected, in fact, that other features will be added by system operators in accordance with customer preferences and/or system performance requirements. Furthermore, while not explicitly shown or described herein, the details of the various software routines, executable code, etc., required to effectuate the functionality discussed above in such modules are not material to the present invention, and may be implemented in any number of ways known to those skilled in the art. Such code, routines, etc. may be stored in any number of forms of machine readable media. The above descriptions are intended as merely illustrative embodiments of the proposed inventions. It is understood that the protection afforded the present invention also comprehends and extends to embodiments different from those above, but which fall within the scope of the present claims.

What is claimed is:

1. A method of testing recognition of images for a CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) system comprising:

   a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises imagery other than words;
   b. associating said electronic image with one or more concepts;
   c. progressively revealing information over a first time period for said electronic image within an interface for said participant using said computing system;
   d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image.

2. The method of claim 1 further including a step: calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time.

3. The method of claim 1 wherein said electronic image is presented at different time intervals with differing levels of resolution, noise and/or pixelation.

4. The method of claim 1 further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system.

5. The method of claim 4 wherein said second computing system is associated with a portable electronics device.

6. A method of providing a visual CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises imagery other than words;

b. associating said electronic image with one or more concepts;

c. progressively revealing information over a first time period for said electronic image within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to detect if a guess from said participant for said one or more concepts associated with said electronic image meets a required threshold.

7. The method of claim 6, wherein said responses are received in audible form and processed by a speech recognition device adapted to recognize human voices.

8. The method of claim 6 wherein the CAPTCHA challenge is embodied in a computer readable form and implemented as a routine executing on a portable computing device which also has motion and/or orientation sensors.

9. The method of claim 8 wherein the visual CAPTCHA challenge is combined with a physical CAPTCHA challenge requiring the user to manipulate the portable computing device in a prescribed manner.

10. The method of claim 9 wherein said physical CAPTCHA challenge is used to interact with elements of said electronic image and/or other objects presented in said interface.

11. A method of providing a motion and/or orientation based CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge on a portable computing device comprising:

a. automatically electing a manipulation challenge for a user with the portable computing device, wherein said manipulation challenge includes a set of physical manipulation instructions for the portable computing device for the user;

b. automatically processing sensory data associated with user movements and/or manipulations of the portable computing device;

c. automatically determining if said user movements and/or manipulations from the user meet a required threshold for satisfying said set of manipulation instructions.

12. The method of claim 11 wherein the set of physical manipulation instructions for the motion and/or orientation based CAPTCHA challenge are presented in an electronic image.

13. The method of claim 11 wherein the set of physical manipulation instructions for the motion and/or orientation based CAPTCHA challenge are presented in audible form by a text to speech engine operating on the portable computing device.

14. The method of claim 11 wherein said set of physical manipulation instructions requires the user to move the portable computing device so as to manipulate objects presented in an interface.

15. The method of claim 11 wherein said set of physical manipulation instructions require the user to orient a needle of a virtual compass in a specified direction.

16. The method of claim 11 wherein said set of physical manipulation instructions require the user to speak or blow into a microphone.

17. The method of claim 11 wherein the motion and/or orientation based CAPTCHA challenge is embodied in computer readable form and implemented as a routine executing on the portable computing device.

18. A method of providing a touch based CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge on a portable computing device comprising:

a. automatically electing a manipulation challenge for a user with the portable computing device, wherein said manipulation challenge includes a set of physical touch instructions for the portable computing device for the user;

b. automatically processing touch sensory data associated with user movements and/or manipulations of objects within a graphical interface of the portable computing device;

c. automatically determining if said user touch sensory data meets a required threshold for satisfying said set of physical touch instructions.

19. The method of claim 18 wherein the set of physical touch instructions for the motion and/or orientation based CAPTCHA challenge are presented in an electronic image.

20. The method of claim 18 wherein the set of physical touch instructions for the motion and/or orientation based CAPTCHA challenge are presented in audible form by a text to speech engine operating on the portable computing device.

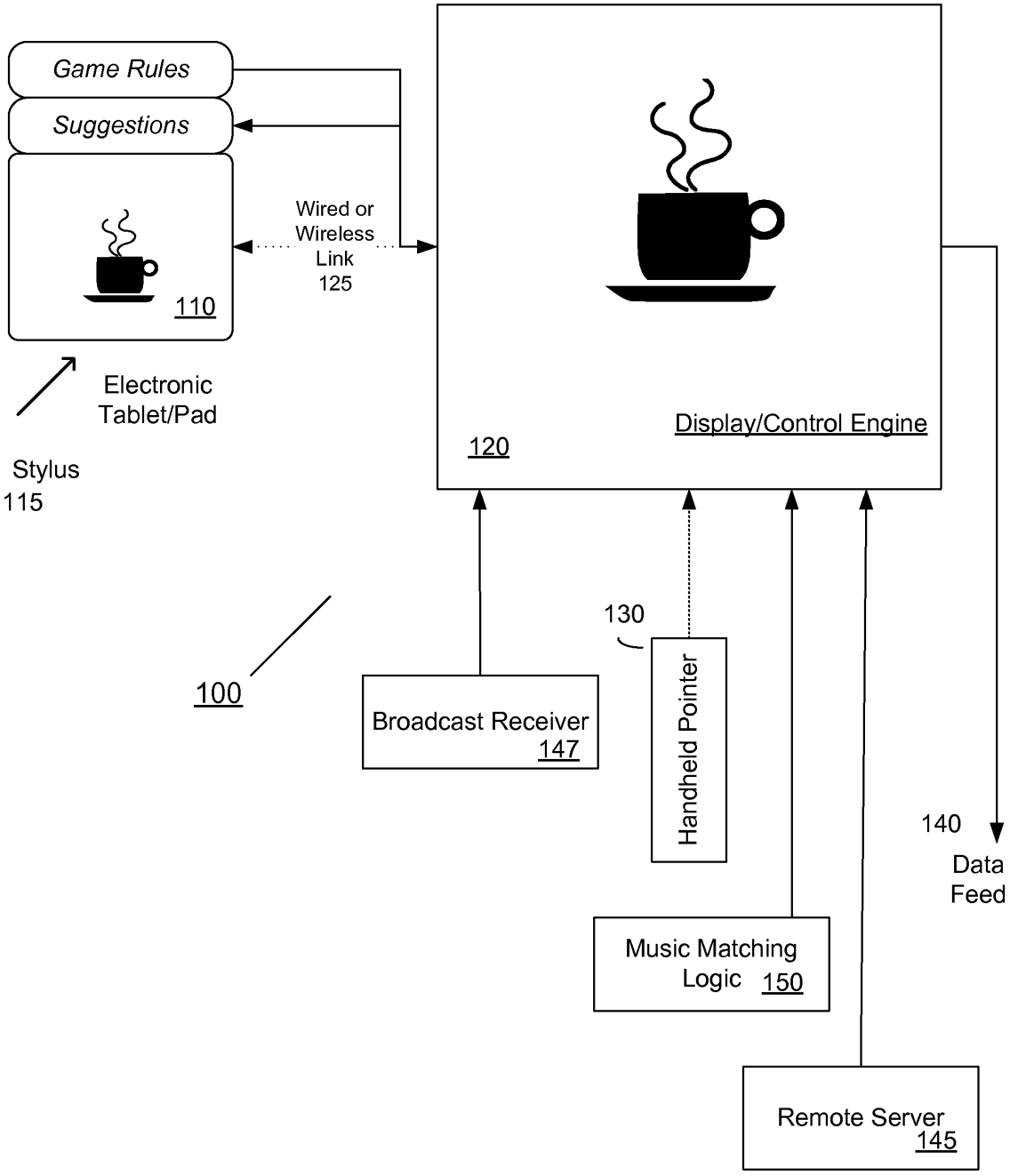
21. The method of claim 18 wherein said set of physical touch instructions require the user to arrange a set of letters on the graphical interface.

22. The method of claim 18 wherein the touch based CAPTCHA challenge is embodied in computer readable form and implemented as a routine executing on the portable computing device.

ABSTRACT

A CAPTCHA system uses images/pictures and/or motion for granting access to a computing system. The images can be culled from examples used in pictorial games, and can progressively presented to increase the strength of the CAPTCHA challenges. Speech recognition, motion and touch sensing can also be employed as parts of the challenge.

Fig. 1


Game Rules
Suggestions
Wired or
Wireless
Link
125
110
Electronic
Tablet/Pad
Stylus
115
120
Display/Control Engine
100
130
Handheld Pointer
Broadcast Receiver
147
140
Data
Feed
Music Matching
Logic 150
Remote Server
145

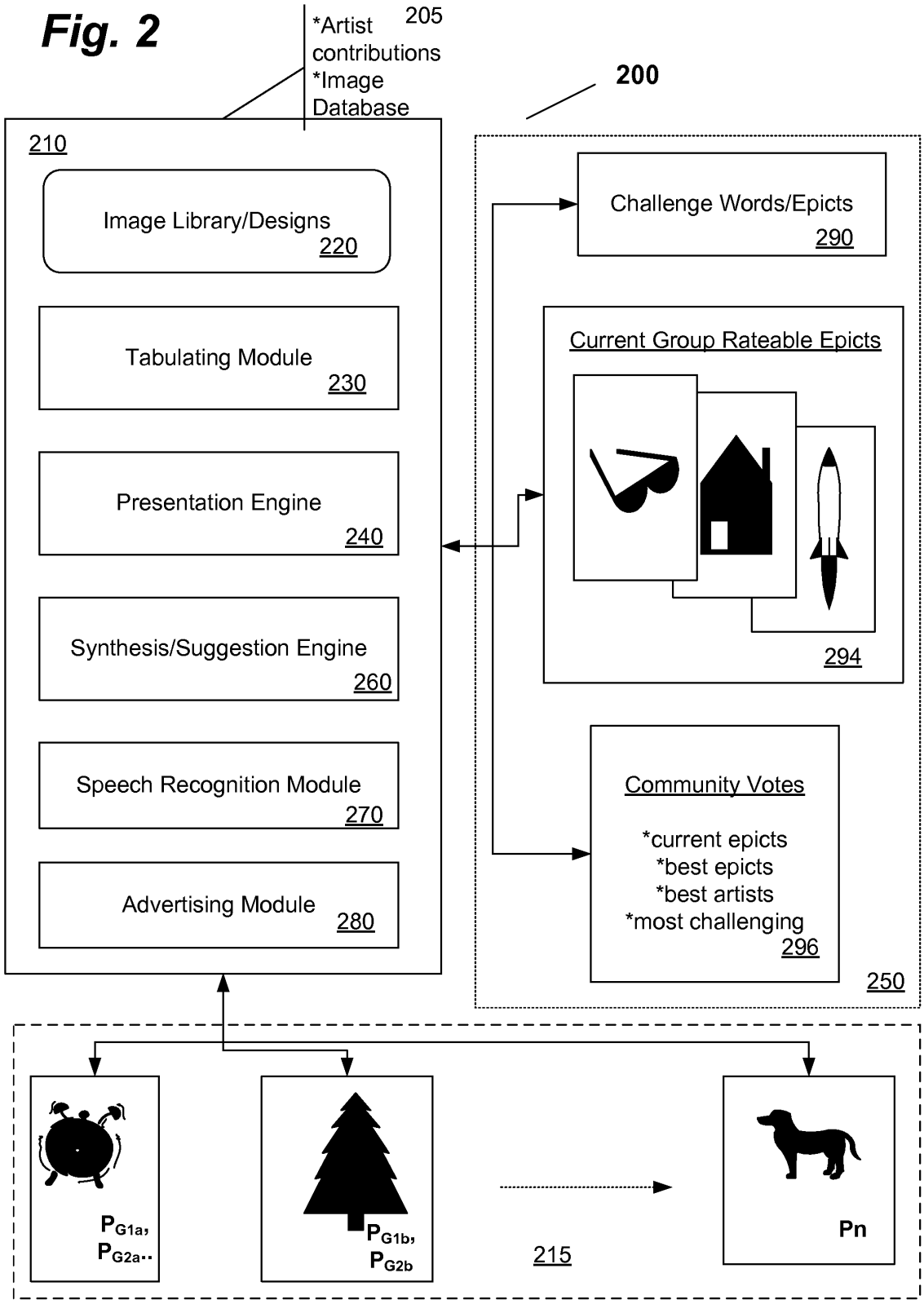
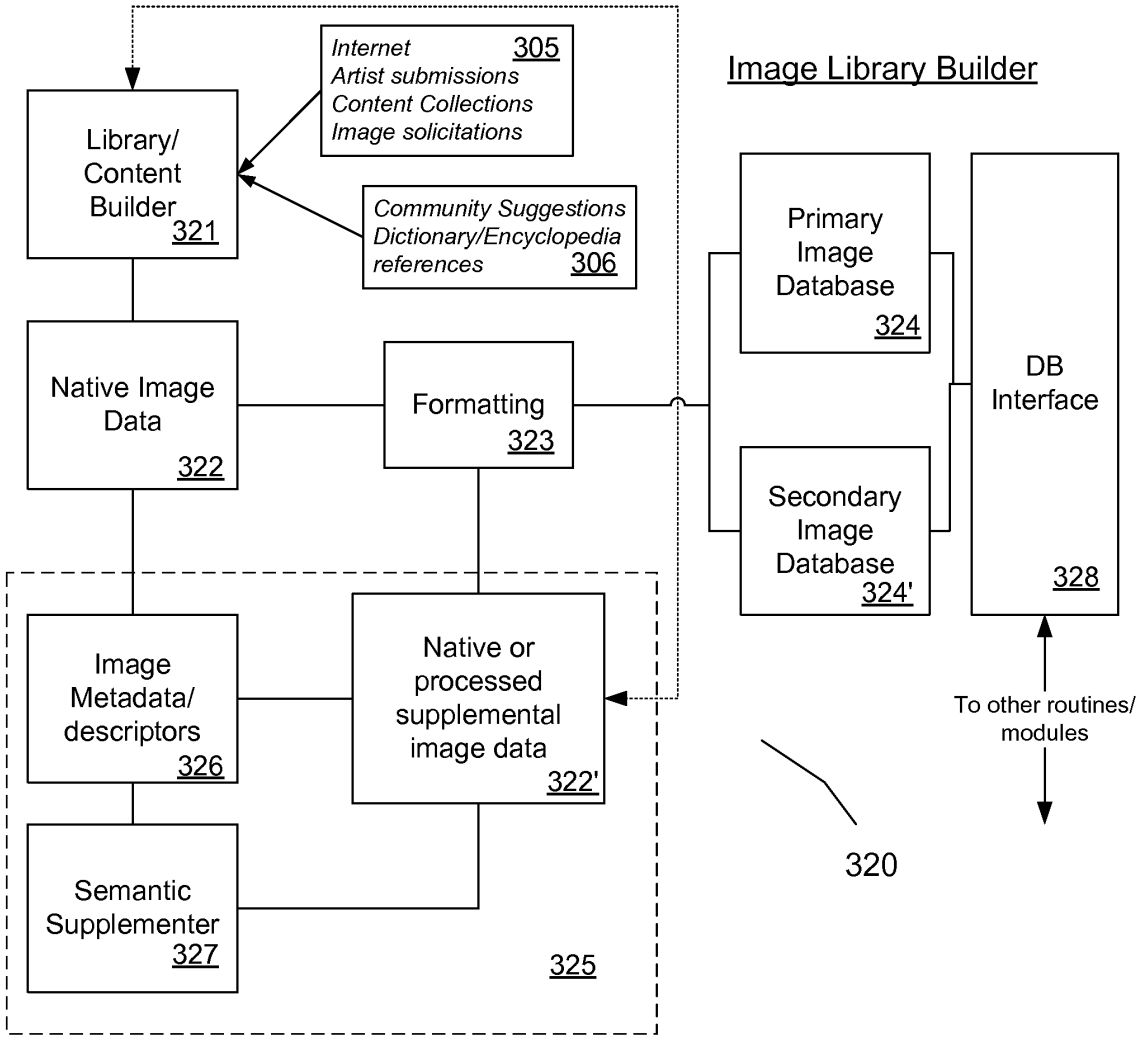

Fig. 2
*Artist contributions *Image Database
205
200
210
Image Library/Designs
220
Tabulating Module
230
Presentation Engine
240
Synthesis/Suggestion Engine
260
Speech Recognition Module
270
Advertising Module
280
Challenge Words/Epicts
290
Current Group Rateable Epicts
294
Community Votes
*current epicts
*best epicts
*best artists
*most challenging
296
250
P_{G1a}, P_{G2a}..
P_{G1b}, P_{G2b}
215
Pn

Fig. 3A



329

Image ID	Image Name(s)	Image Components	Image Timing Components	Related Image Components	Origin ID

Fig. 3B

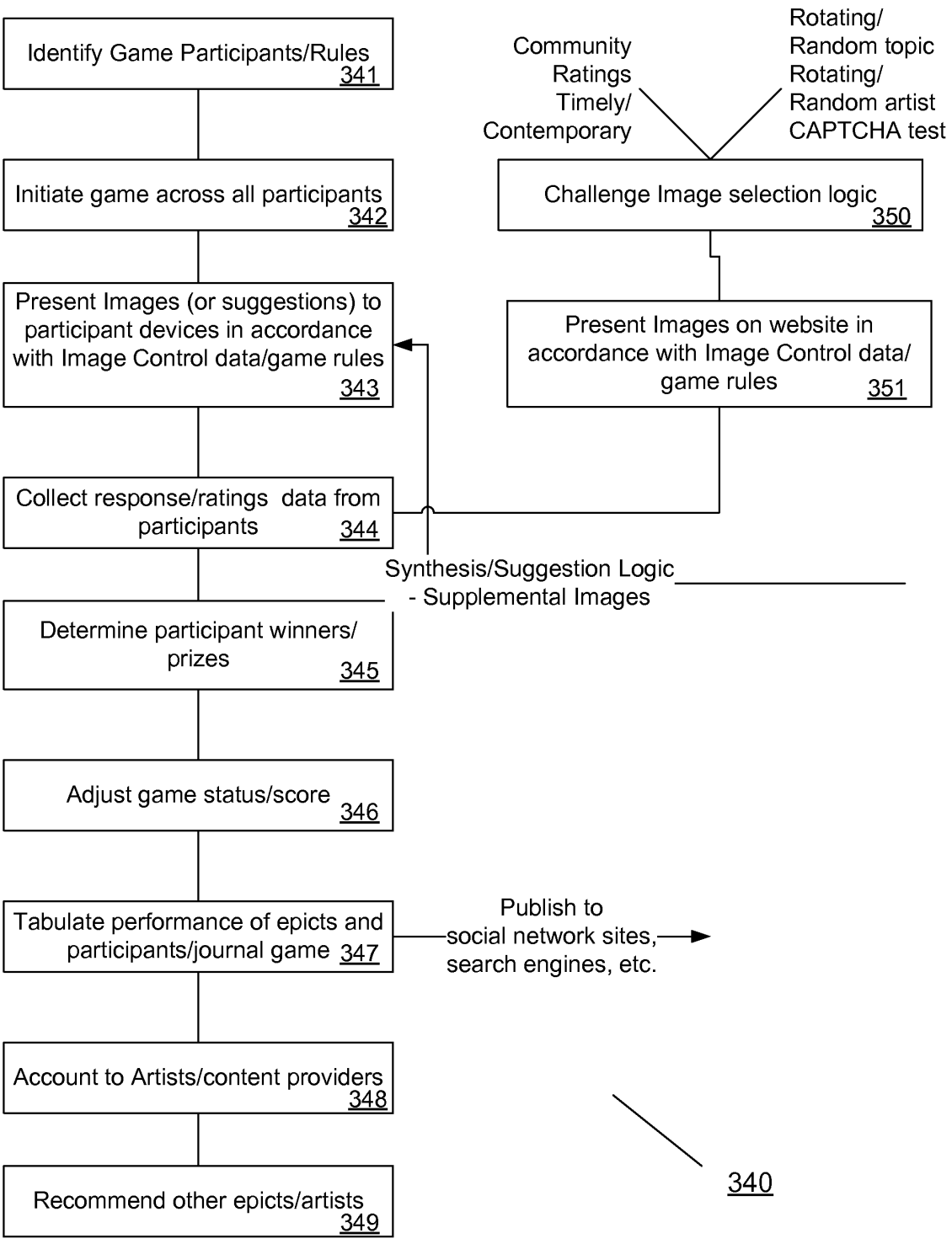
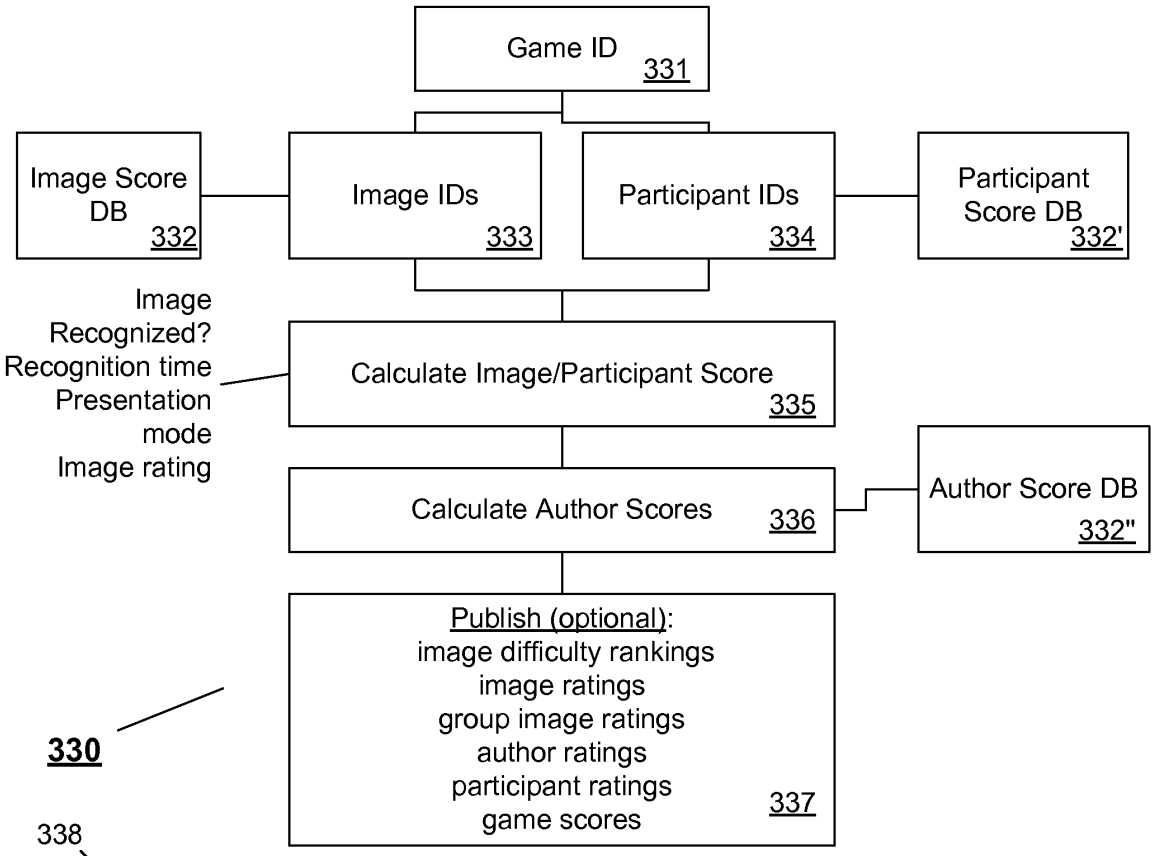

Presentation Engine
Identify Game Participants/Rules 341
Initiate game across all participants 342
Present Images (or suggestions) to participant devices in accordance with Image Control data/game rules 343
Collect response/ratings data from participants 344
Determine participant winners/ prizes 345
Adjust game status/score 346
Tabulate performance of epicts and participants/journal game 347
Account to Artists/content providers 348
Recommend other epicts/artists 349
Community Ratings Timely/ Contemporary
Rotating/ Random topic Rotating/ Random artist CAPTCHA test
Challenge Image selection logic 350
Present Images on website in accordance with Image Control data/ game rules 351
Synthesis/Suggestion Logic - Supplemental Images
Publish to social network sites, search engines, etc.
340

Fig. 3C



338

Image ID	Presentation mode	% identified Within time	Mean recognition time (RT)	Standard deviation RT	Ratings Score	Difficulty Rating	Demo-graphic data

338'

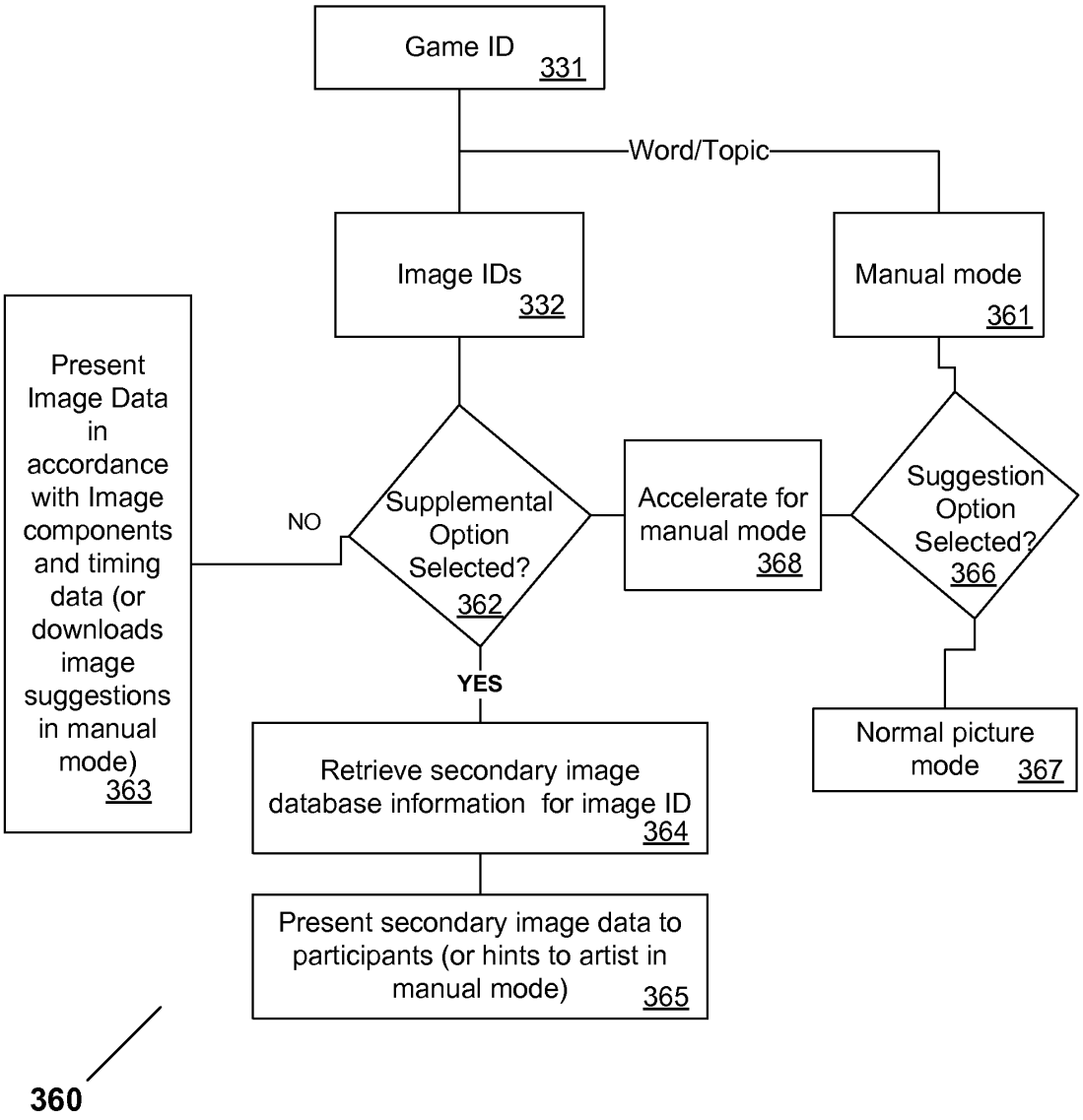
Participant ID	Images Perceived	Images Recognized	Mean Recognition Time	SD (RT)	Ratings Score	Favorite Authors	Image IDs authored

338"

Author ID	Image IDs	Average Images Recognition Score	Mean Recognition Time	SD (RT)	Author Score	Working on image challenge

Tabulating Module

Fig. 3D



SYNTHESIS - SUGGESTION MODULE

Fig. 3E

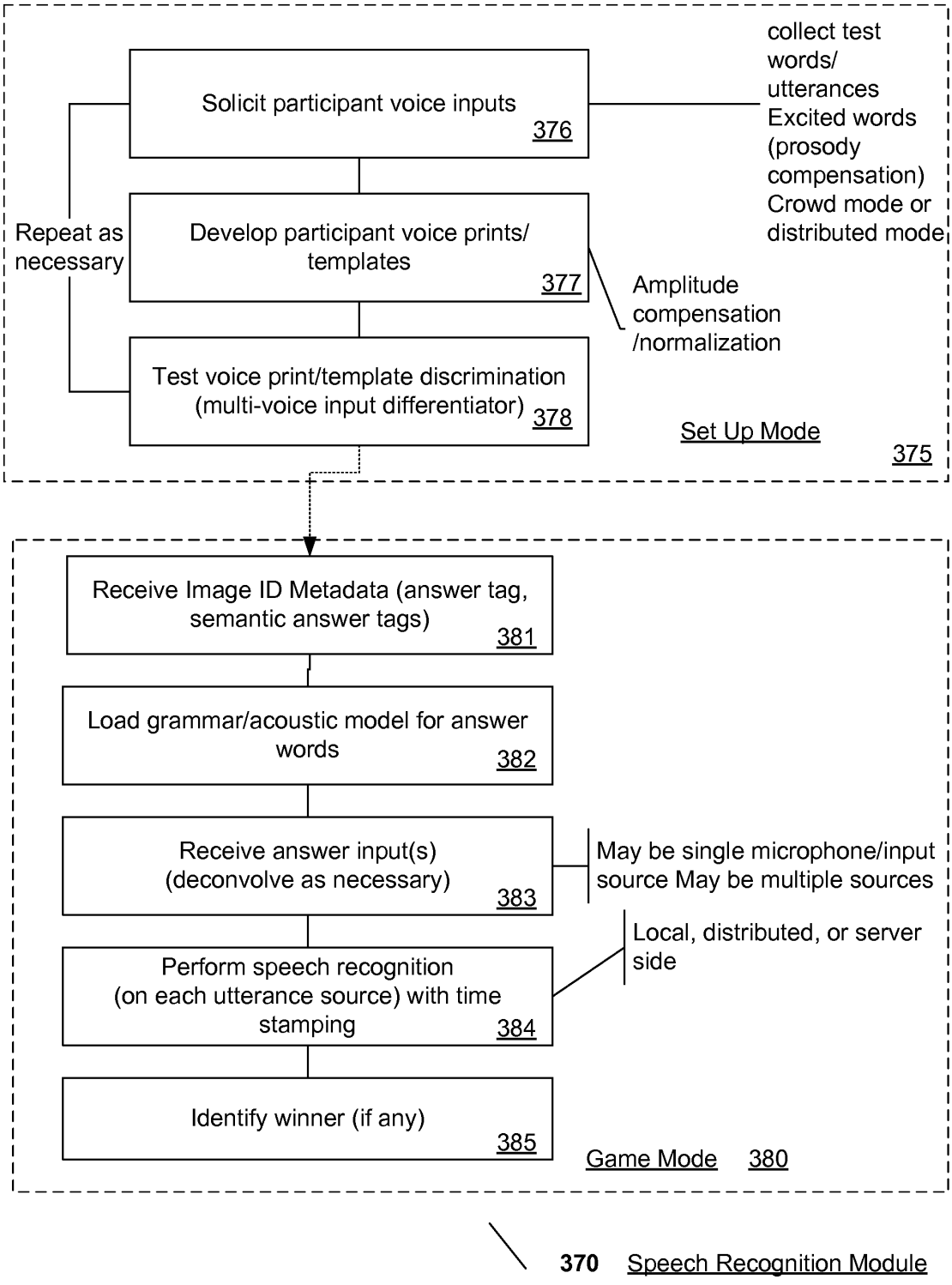
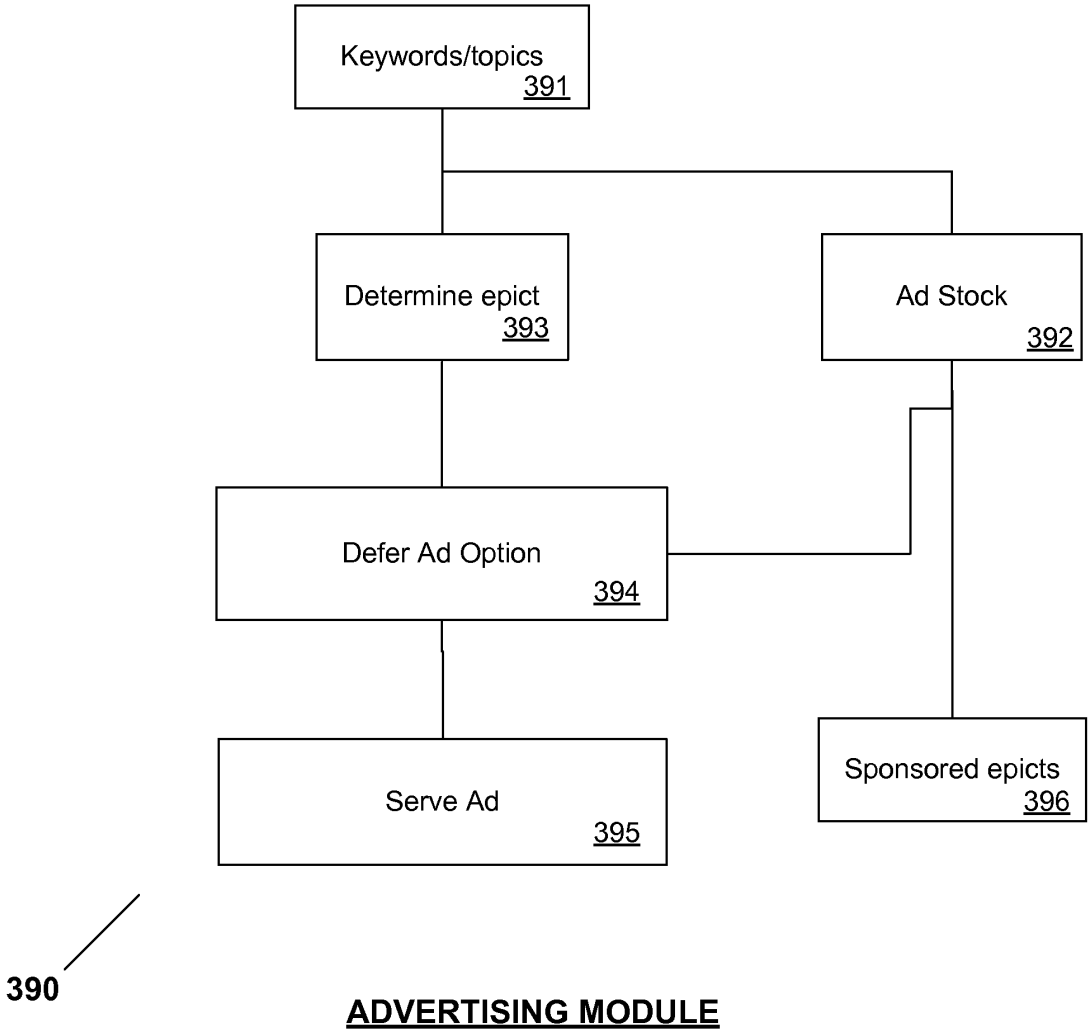

Solicit participant voice inputs
376
collect test words/ utterances Excited words (prosody compensation) Crowd mode or distributed mode
Repeat as necessary
Develop participant voice prints/ templates
377
Amplitude compensation /normalization
Test voice print/template discrimination (multi-voice input differentiator)
378
Set Up Mode
375
Receive Image ID Metadata (answer tag, semantic answer tags)
381
Load grammar/acoustic model for answer words
382
Receive answer input(s) (deconvolve as necessary)
383
May be single microphone/input source May be multiple sources
Perform speech recognition (on each utterance source) with time stamping
384
Local, distributed, or server side
Identify winner (if any)
385
Game Mode
380
370
Speech Recognition Module

FIG. 3F



ADVERTISING MODULE

Fig. 3G

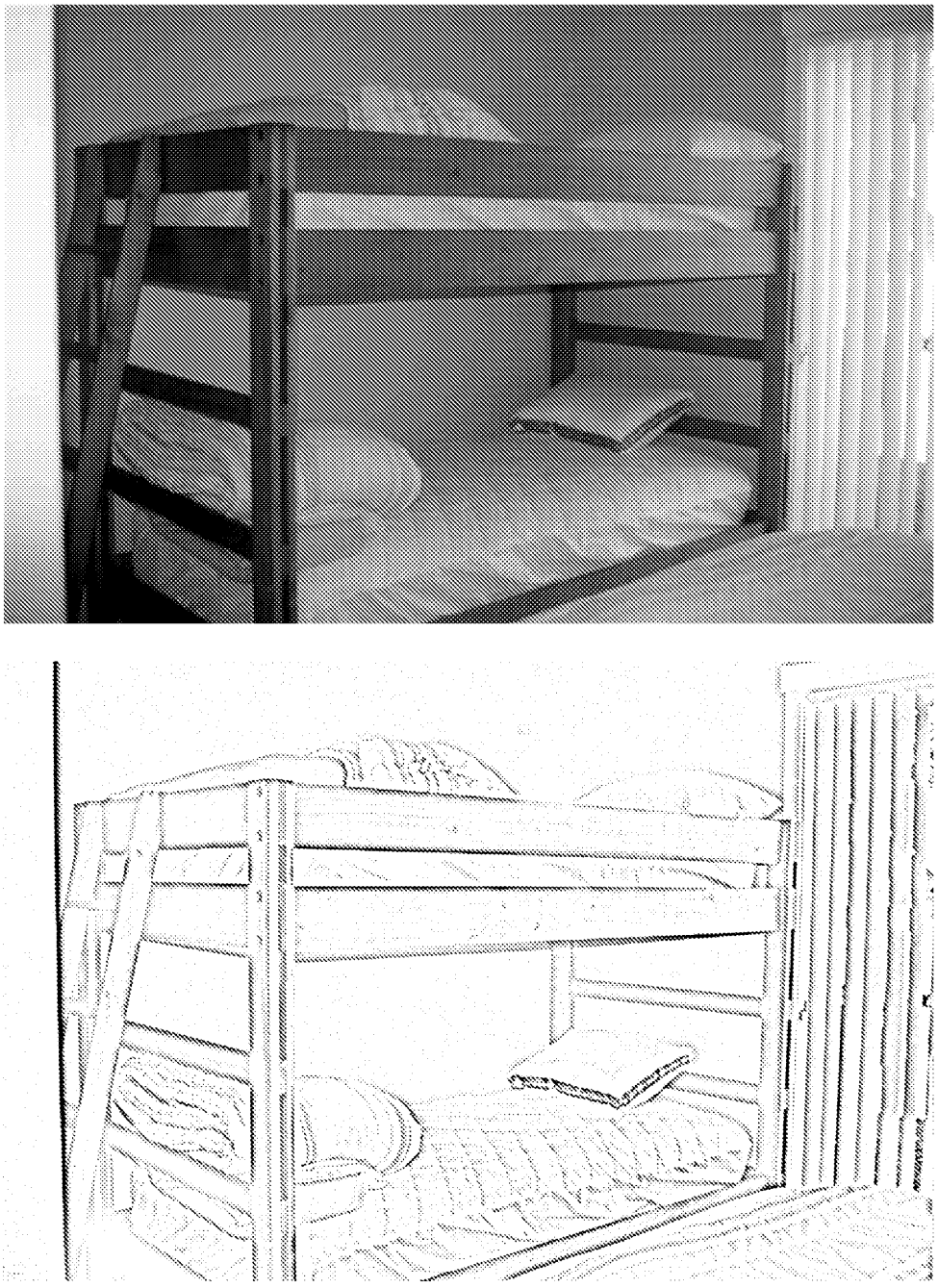


Fig. 3H





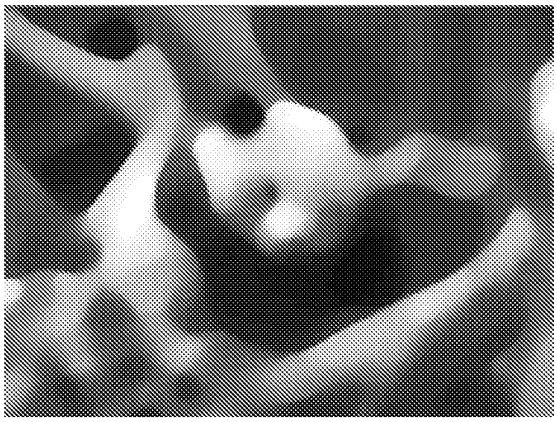


Fig. 3J

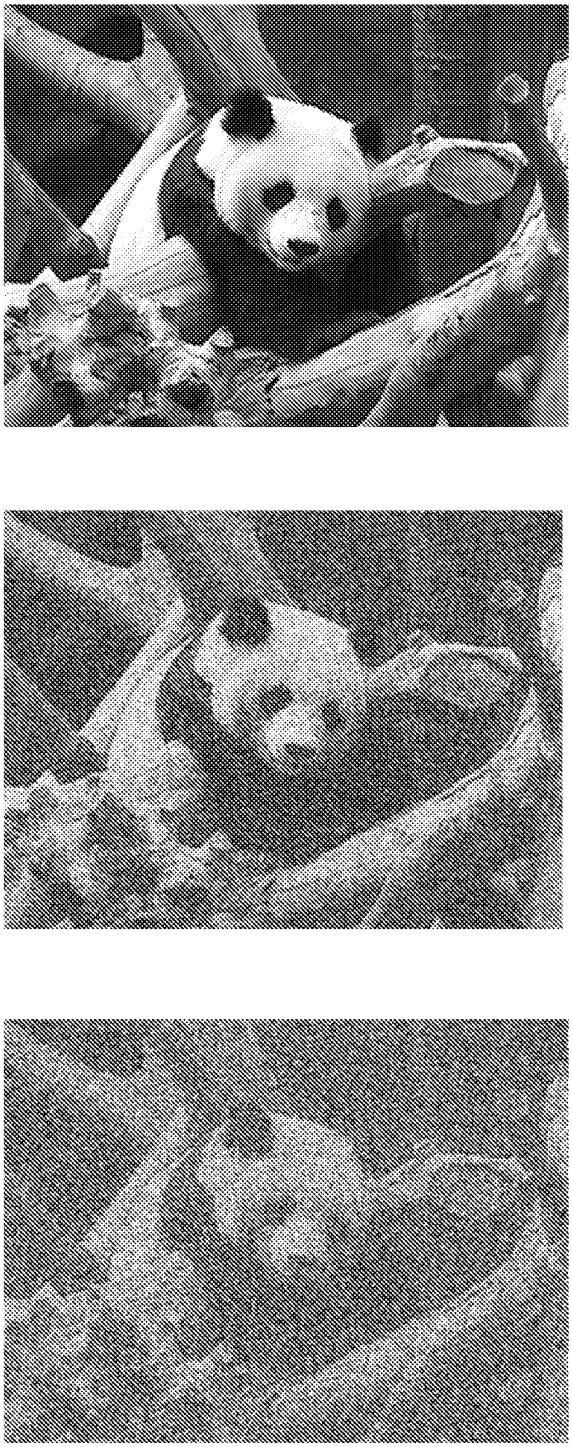


Fig. 4

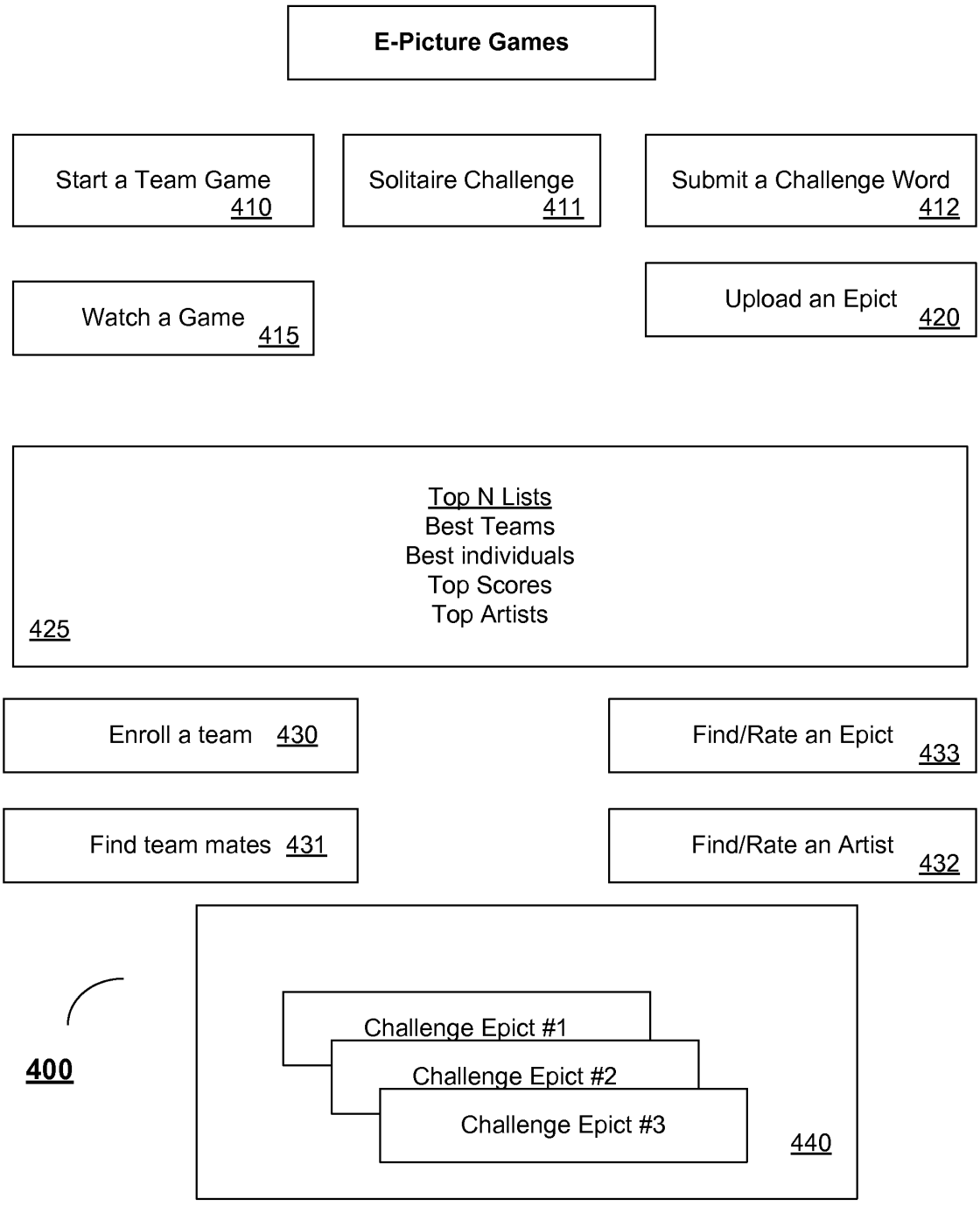

E-Picture Games
Start a Team Game 410
Solitaire Challenge 411
Submit a Challenge Word 412
Watch a Game 415
Upload an Epict 420
Top N Lists
Best Teams
Best individuals
Top Scores
Top Artists
425
Enroll a team 430
Find/Rate an Epict 433
Find team mates 431
Find/Rate an Artist 432
400
Challenge Epict #1
Challenge Epict #2
Challenge Epict #3
440

Fig. 5

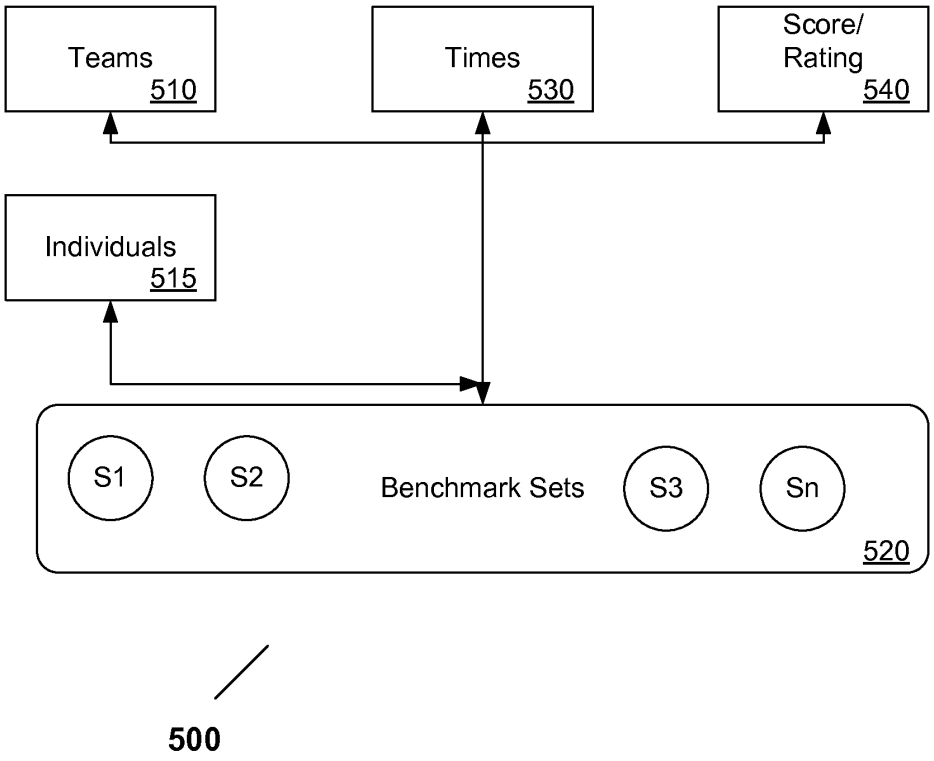

Teams
510
Times
530
Score/
Rating
540
Individuals
515
S1
S2
Benchmark Sets
S3
Sn
520
500

Fig. 6

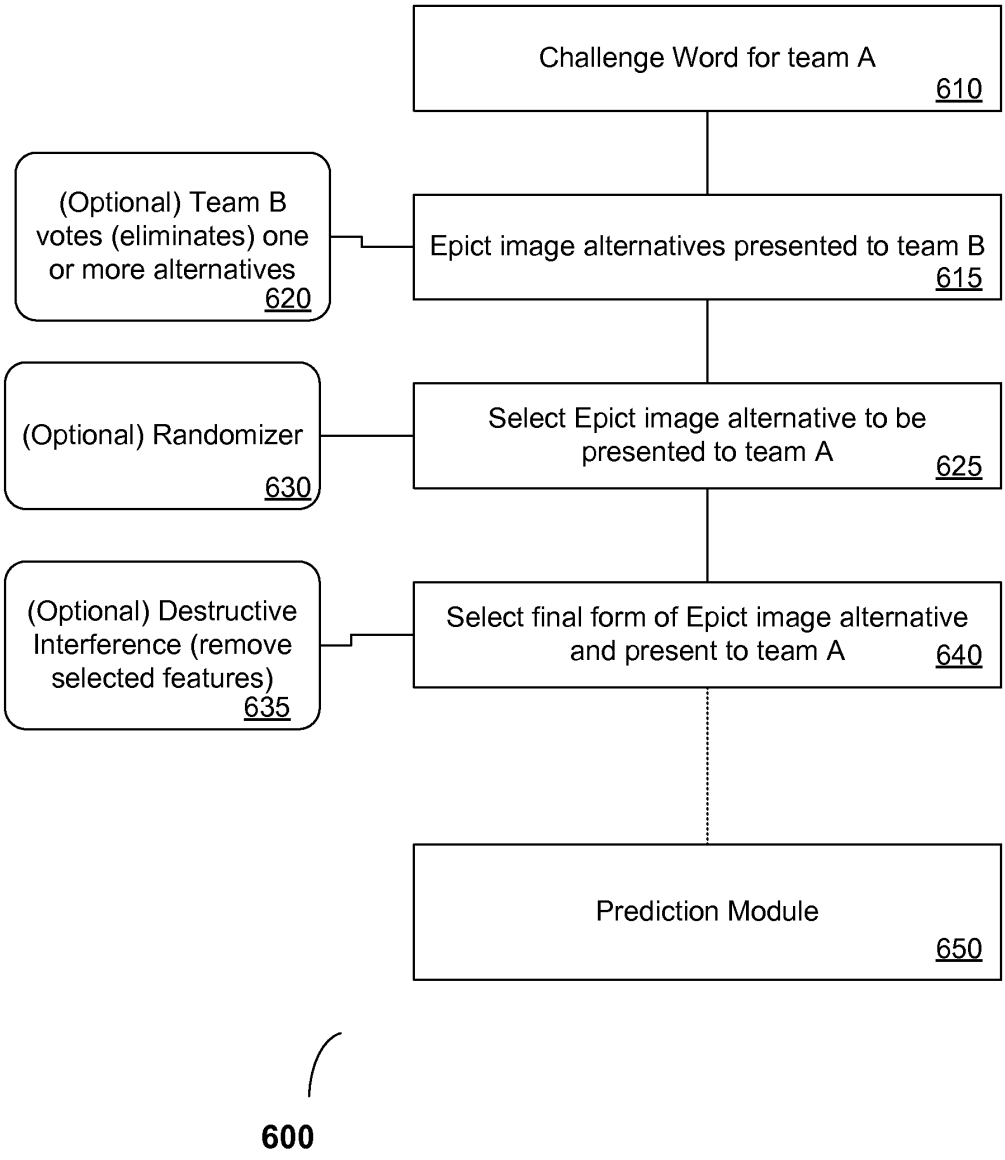

Challenge Word for team A
610
(Optional) Team B votes (eliminates) one or more alternatives
620
Epict image alternatives presented to team B
615
(Optional) Randomizer
630
Select Epict image alternative to be presented to team A
625
(Optional) Destructive Interference (remove selected features)
635
Select final form of Epict image alternative and present to team A
640
Prediction Module
650
600

Fig. 7

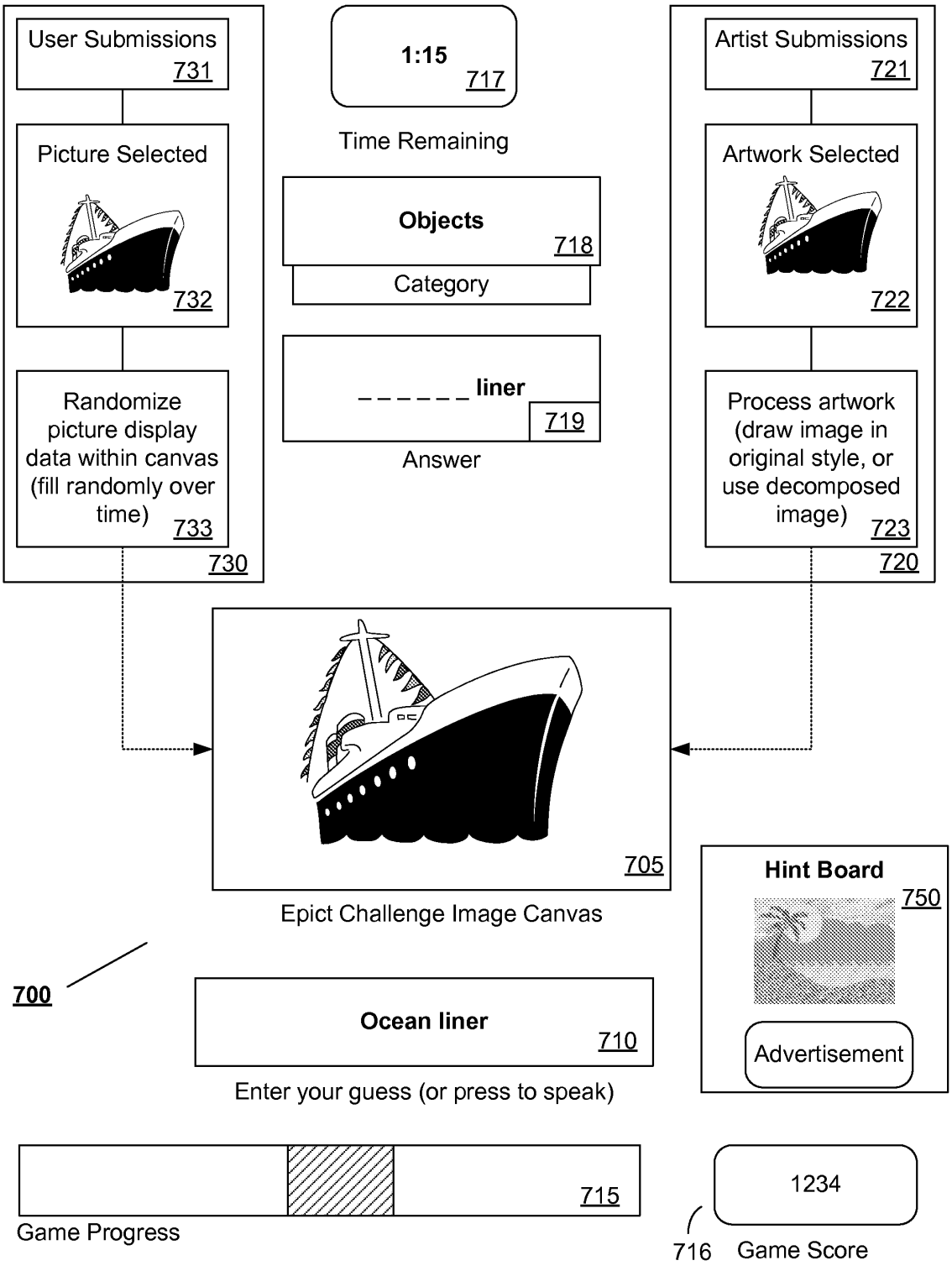
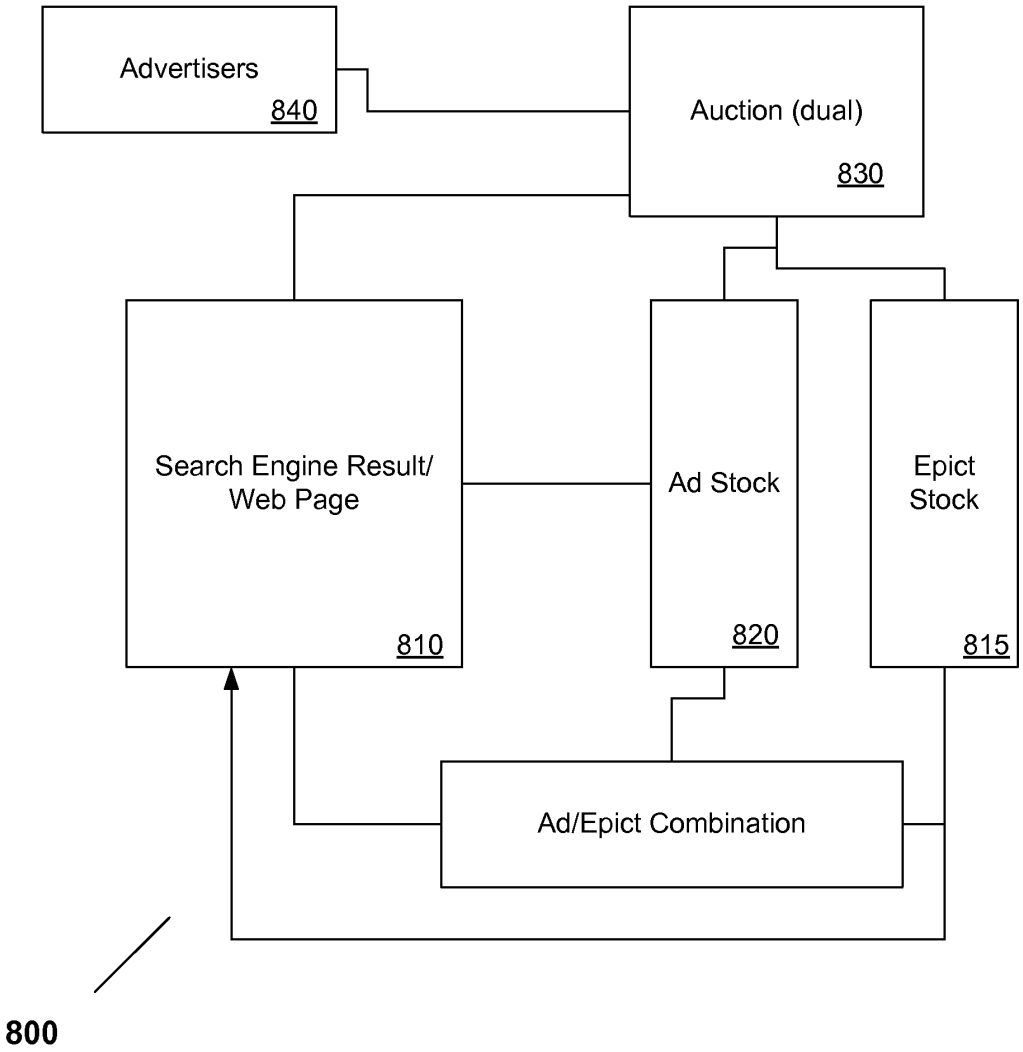

User Submissions
731
Picture Selected
732
Randomize picture display data within canvas (fill randomly over time)
733
730
1:15
717
Time Remaining
Objects
718
Category
liner
719
Answer
Artist Submissions
721
Artwork Selected
722
Process artwork (draw image in original style, or use decomposed image)
723
720
705
Epict Challenge Image Canvas
Hint Board
750
Advertisement
700
Ocean liner
710
Enter your guess (or press to speak)
715
Game Progress
1234
716
Game Score

Fig. 8


Advertisers
840
Auction (dual)
830
Search Engine Result/
Web Page
810
Ad Stock
820
Epict
Stock
815
Ad/Epict Combination
800

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	JNG 2009-6
	Application Number	
Title of Invention	Progressive Pictorial & Motion Based CAPTCHAs	

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Secrecy Order 37 CFR 5.2

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Applicant Information:

Applicant 1 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	JOHN	NICHOLAS	GROSS	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	BERKELEY	State/Province	CA	Country of Residence i	US

Citizenship under 37 CFR 1.41(b) i: US

Mailing Address of Applicant:

Address 1	1215 OXFORD ST		
Address 2			
City	BERKELEY	State/Province	CA
Postal Code	94709	Country i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	23694		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	Progressive Pictorial & Motion Based CAPTCHAs		
Attorney Docket Number	JNG 2009-6	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	16	Suggested Figure for Publication (if any)	1

PTO/SB/14 (07-07)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	JNG 2009-6
	Application Number	
Title of Invention	Progressive Pictorial & Motion Based CAPTCHAs	

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	**Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	23694		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61076495	2008-06-27

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1 Remove

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	JNG 2009-6
	Application Number	
Title of Invention	Progressive Pictorial & Motion Based CAPTCHAs	

If the Assignee is an Organization check here. ☐				
Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information:			
Address 1			
Address 2			
City		**State/Province**	
Country [i]		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the **Add** button. Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/JOHN NICHOLAS GROSS/			Date (YYYY-MM-DD)	2009-06-29
First Name	JOHN	Last Name	GROSS	Registration Number	34175

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: Oath
Document Description: Oath or declaration filed

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted With Initial Filing OR ☐ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

Attorney Docket Number	JNG 2009-6
First Named Inventor	GROSS
COMPLETE IF KNOWN	
Application Number	N/A
Filing Date	6/29/2009
Art Unit	N/A
Examiner Name	N/A

I hereby declare that: (1) Each inventor's residence, mailing address, and citizenship are as stated below next to their name; and (2) I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention titled:

Progressive Pictorial & Motion Based CAPTCHAs

(Title of the Invention)

the application of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) _____ as United States Application Number or PCT International Application Number _____ and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Authorization To Permit Access To Application by Participating Offices

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/01 (04-09)
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DECLARATION — Utility or Design Patent Application

Claim of Foreign Priority Benefits

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application number(s) are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

PTO/SB/01 (04-09)
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DECLARATION — Utility or Design Patent Application

Direct all correspondence to:	☒	The address associated with Customer Number:	23694	OR ☐	Correspondence address below

Name		
Address		
City	State	Zip
Country	Telephone	Email

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: *Patent Application Files*. Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: *Deposit Accounts and Electronic Funds Transfer Profiles*.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further 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 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:	☐ A petition has been filed for this unsigned inventor
Given Name (first and middle [if any])	Family Name or Surname
JOHN NICHOLAS	GROSS
Inventor's Signature	Date
/JOHN NICHOLAS GROSS/	June 29, 2009

Residence: City	State	Country	Citizenship
BERKELEY	CA	USA	USA
Mailing Address			
1215 OXFORD ST			
City	State	Zip	Country
BERKELEY	CA	94709	USA

☐ Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal	
Application Number:	
Filing Date:	
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	John Nicholas Gross
Filer:	John Nicholas Gross
Attorney Docket Number:	JNG 2009-6
Filed as Small Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Claims in excess of 20	2202	2	26	52
Independent claims in excess of 3	2201	1	110	110
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**624**

Electronic Acknowledgement Receipt	
EFS ID:	5609544
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	John Nicholas Gross
Customer Number:	23694
Filer:	John Nicholas Gross
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	29-JUN-2009
Filing Date:	
Time Stamp:	18:57:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$624
RAM confirmation Number	5179
Deposit Account	501244
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		JNG-2009-6-spec-claims-abs-as-filed.pdf	238468 b766dcd0c165ce94aa72f20286126222736 31a72	yes	49

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	44
	Claims	45	48
	Abstract	49	49

Warnings:

Information:

2	Drawings-only black and white line drawings	JNG-2009-6-formal-figs-1-no-color.pdf	830713 7a0825189ab134f3201825f33363a279b01 3b4cb	no	16

Warnings:

Information:

3	Application Data Sheet	JNG-2009-6-ADS.pdf	968590 e9da36d8e49f5c393cb7bda60b1e264dd87 e752f	no	4

Warnings:

Information:

4	Oath or Declaration filed	JNG-2009-6-Declaration.pdf	807691 c719af5027c1daee0f6b8499adaa04e675d4 7e12	no	4

Warnings:

Information:

5	Fee Worksheet (PTO-875)	fee-info.pdf	37988 8beb33fc7bd1a48367c0bd728a0d45a1647 e02d4	no	2

Warnings:

Information:

Total Files Size (in bytes):	2883450

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (12-04)

Filing Date: 06/29/09

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/494,083

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	82		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	270		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	110		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	22 minus 20 =	2	x$26	52	OR	x$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x$110	110		x$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195			390	
			TOTAL	624		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

AMENDMENT A		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDI-TIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDI-TIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

AMENDMENT B		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDI-TIONAL FEE ($)	OR	RATE ($)	ADDI-TIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
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SCORE Placeholder Sheet for IFW Content

Application Number: 12494083 Document Date: 6/29/2009

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/494,083	06/29/2009	2625	624	JNG 2009-6	22	4

CONFIRMATION NO. 1550

23694
J. NICHOLAS GROSS, ATTORNEY
2030 ADDISON ST.
SUITE 610
BERKELEY, CA 94704

FILING RECEIPT

OC00000036839195

Date Mailed: 07/13/2009

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

JOHN NICHOLAS GROSS, BERKELEY, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/076,495 06/27/2008

Foreign Applications

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 07/08/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/494,083**

Projected Publication Date: 12/31/2009

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****

Title

Progressive Pictorial & Motion Based CAPTCHAs

Preliminary Class

358

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

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PTO/SB/08a (07-09)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross
	Art Unit	2431
	Examiner Name	
	Attorney Docket Number	JNG 2009-6

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
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	1	GOSSWEILER, Rich et al.; "What's Up CAPTCHA? A CAPTCHA Based On Image Orientation," WWW 2009, April 20–24, 2009, Madrid, Spain, 10 pages.	☐
	2	VON AHN, Luis et al.; "Labeling Images with a Computer Game," CHI 2004, April 24–29, 2004, Vienna, Austria, 8 pages.	☐
	3	VON AHN, Luis et al. "Peekaboom: a game for locating objects in images," Proceedings of the SIGCHI conference on Human Factors in computing systems, April 22-27, 2006, Montréal, Québec, Canada, 23 pages	☐
	4	"Guess-a-Sketch," web.archive.org/web/…/GAS.html, Nov 24, 2002, 5 pages.	☐
	5	"GWAP," http://blog.gwap.com/2008/05/hellow-world.html, May 13, 2008, 3 pages.	☐

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Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross
	Art Unit	2431
	Examiner Name	
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John N. Gross/	Date (YYYY-MM-DD)	2009-10-30
Name/Print	John N. Gross	Registration Number	34175

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Electronic Acknowledgement Receipt	
EFS ID:	6368763
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	23694
Filer:	John Nicholas Gross
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	30-OCT-2009
Filing Date:	29-JUN-2009
Time Stamp:	19:16:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Filed (SB/08)	JNG-2009-6-IDS-1.pdf	609035 1603a9b98228f38f540764cf191fbe8fc6a22ed5	no	4

Warnings:
Information:

2	NPL Documents	Gossweiler-whats-up.pdf	1465812 0522bd51643e0df7f824fab2b28e5f7c7941dd6e	no	10
Warnings:					
Information:					
3	NPL Documents	Ahn-Labeling-images.pdf	2438921 bcb665c8465381027c720bb40b12aeb0acbf89dc	no	8
Warnings:					
Information:					
4	NPL Documents	guess-sketch-1.pdf	2041749 0ba47b24268c8c4717f4c036319b07e4074f24e3	no	5
Warnings:					
Information:					
5	NPL Documents	GWAP-website-1.pdf	512153 e49dc5d5a09430eeb58ee7c22f528c4c6d77826e	no	3
Warnings:					
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6	NPL Documents	Ahn-Peekaboom-1.pdf	3835002 b51ff67f5fea81d1a749439f12ff6dfebaed8d55	no	23
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6

CONFIRMATION NO. 1550

23694
Law Office of J. Nicholas Gross, Prof. Corp.
2030 ADDISON ST.
SUITE 610
BERKELEY, CA 94704

PUBLICATION NOTICE



Title: Progressive Pictorial & Motion Based CAPTCHAs

Publication No.US-2009-0328150-A1
Publication Date:12/31/2009

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The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATIONS OF:

John Nicholas Gross

* * *

POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

As the inventor of the following patent applications, I hereby revoke all prior powers of attorney and authorizations of agent and appoint the practitioners associated with **Customer Number 52447** as my attorney(s) and/or agent(s) to prosecute the patent applications identified below and to transact all business in the United States Patent and Trademark Office connected therewith. This Power of Attorney pertains to:

1. U.S. Provisional Patent Application No. 61/043,363, filed April 8, 2008 and given docket no. JNG 2008P-1.
2. U.S. Provisional Patent Application No. 61/074,979, filed June 23, 2008 and given docket no. JNG 2008-2P.
3. U.S. Provisional Patent Application No. 61/076,495, filed June 27, 2008 and given docket no. JNG 2008-3P.
4. U.S. Patent Application No. 12/484,800, filed June 15, 2009 and given docket no. JNG 2009-1.
5. U.S. Patent Application No. 12/484,837, filed June 15, 2009 and given docket no. JNG 2009-2.
6. U.S. Patent Application No. 12/484,870, filed June 15, 2009 and given docket no. JNG 2009-3.
7. U.S. Patent Application No. 12/494,013, filed June 29, 2009 and given docket no. JNG 2009-4.

8. U.S. Patent Application No. 12/494,065, filed June 29, 2009 and given docket no. JNG 2009-5.
9. U.S. Patent Application No. 12/494,083, filed June 29, 2009 and given docket no. JNG 2009-6.

Please direct all correspondence in the above-identified patent applications to the correspondence address associated with **Customer No. 52447**.

Respectfully submitted,

By: _____
J. Nicholas Gross
Inventor

Date: 6/10/2011

Electronic Acknowledgement Receipt	
EFS ID:	10312254
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	23694
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	15-JUN-2011
Filing Date:	29-JUN-2009
Time Stamp:	16:39:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	PowerofAttorney.pdf	333328 b459a1ad4372711675e4c71f2f6d16ba6a8e3c91	no	2
Warnings:					
Information:					

Total Files Size (in bytes):	333328

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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6

CONFIRMATION NO. 1550

52447
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NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/15/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/sibrahim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Beemnet W. Dada
	Attorney Docket Number	JNG 2009-6

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8036902		2011-10-11	Strom et al.	
	2	8032483		2011-10-04	Haveliwala et al.	
	3	8032481		2011-10-04	Pinckney et al.	
	4	8019127		2011-09-12	Misra	
	5	8005197		2011-08-23	Baird et al.	
	6	7929805		2011-04-19	Wang et al.	
	7	7917508		2011-03-29	Baluja et al.	
	8	7841940		2010-11-30	Bronstein	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Beemnet W. Dada
	Attorney Docket Number	JNG 2009-6

	9	7827265		2010-11-02	Cheever et al.	
	10	7725395		2010-05-25	Rui et al.	
	11	7603706		2009-10-13	Donnelly et al.	
	12	7516220		2009-04-07	Stiert	
	13	7505946		2009-03-17	Chellapilla et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2011-11-11
Name/Print	Andrew McAleavey	Registration Number	50,535

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	11392902
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	11-NOV-2011
Filing Date:	29-JUN-2009
Time Stamp:	20:14:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDSJNG2009-6.pdf	612339 411853f4f0718975a418b59467d9bd93a929586f	no	5

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20090297064		2009-12-03	Koziol, et al.	
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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-09-05
Name/Print	Andrew McAleavey	Registration Number	50,535

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Electronic Acknowledgement Receipt	
EFS ID:	13663401
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	05-SEP-2012
Filing Date:	29-JUN-2009
Time Stamp:	15:29:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	updated_IDS.pdf	611814 a52ad997a51e18dc4d1d33f4957a9bc9257a360f	no	4
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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6879956		2005-04-12	Honda et al.	
	2	6697769		2004-02-24	Goodman et al.	
	3	6157912		2000-12-05	Kneser et al.	
	4	5897616		1999-04-27	Kanevsky et al.	
	5	6681205		2004-01-20	San Martin et al.	
	6	6851051		2005-02-01	Bolle et al.	
	7	6208970		2001-03-27	Ramanan	
	8	6195698		2001-02-27	Lillibridge et al.	

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	9	7945952		2011-05-17	Behforooz	
	10	7797191		2010-09-14	Cotten et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20090012855		2009-01-08	Jamal et al.	
	2	20090055193		2009-02-26	Maislos et al.	
	3	20070282605		2007-12-06	Rajakumar	
	4	20070280436		2007-12-06	Rajakumar	
	5	20060248019		2006-11-02	Rajakumar	
	6	20050228641		2005-10-13	Chelba et al.	
	7	20050125226		2005-06-09	Magee	

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	Attorney Docket Number	JNG 2009-6

	8	20050105712		2005-05-19	Williams et al.	
	9	20050071163		2005-03-31	Aaron et al.	
	10	20040249628		2004-12-09	Chelba et al.	
	11	20040102975		2004-05-27	Eide	
	12	20080072293		2008-03-20	D'Urso	
	13	20050114705		2005-05-26	Reshef et al.	
	14	20030125944		2005-12-20	Wohlsen et al.	
	15	20050185847		2008-03-25	Rowe	
	16	20090204819		2009-08-13	Parker	
	17	20090241174		2009-09-24	Rajan et al.	
	18	20090249476		2009-10-01	Seacat	

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	19	20090150983		2009-06-11	Saxena et al.	
	20	20080216163		2008-09-04	Pratte et al.	
	21	20090077629		2009-03-09	Douceur	
	22	20050114137		2005-05-26	Saito et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	2008025019	WO		2008-02-28	DYNAMIC REPRESENTATION SYSTEMS, LLC		☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
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	Attorney Docket Number	JNG 2009-6

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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	Attorney Docket Number	JNG 2009-6

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-10-05
Name/Print	Andrew McAleavey	Registration Number	50,535

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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(19) Europäisches Patentamt
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(54) Challenge-response method and system

(57) Method for performing a challenge-response session between a system (5) and a user, the system outputs challenge information, which is displayed (3) in bitmap, graphic or any other non-computer-readable format. The user sends response information (6) which is related to the content of the challenge. The system checks the response with the challenge. The challenge comprises a response instruction w.r.t. the response to be sent by the user to the system. The system checks the response with the challenge, taking into account the semantic content of the relevant instruction. Preferably, the content of the instruction is variable per session. The content of the instruction may be related to a user identifier, e.g. a user password.

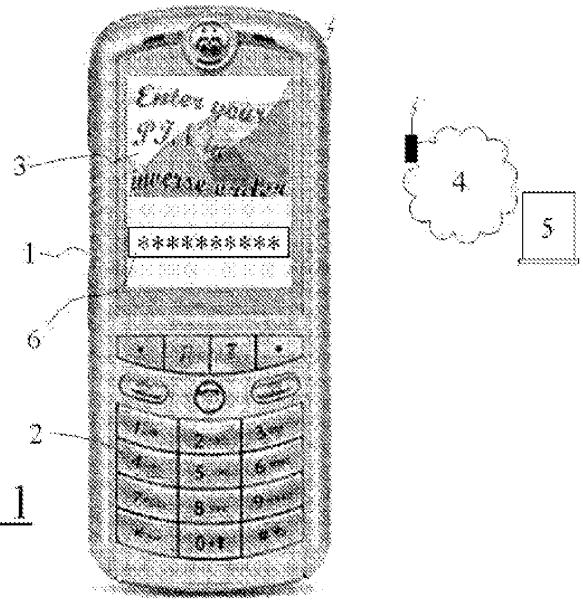


FIG. 1

EP 2 045 754 A1

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Description

[0001] The invention refers to a method for performing a challenge-response session between a system and a user.

[0002] The simplest example of a challenge-response protocol is password authentication, where a system asks the user for a password and the valid response - checked by the system - is the correct password.

[0003] Challenge-response protocols, specially developed to prevent (undesired) automatic responses by machines, may comprise the use of a "captcha" ("completely automated public Turing test to tell computers and humans apart") in which the challenge is a (distorted) image (in bitmap or any other non-computer-readable format) of some text, and the user responds by typing over (the content of) that text. The distortion is designed to make automated optical character recognition (OCR) difficult and preventing a computer program from passing as a human.

[0004] So challenge-response type sessions may comprise the steps of:

- the system outputs challenge information ("challenge" hereinafter), which is displayed in bitmap or any other non-computer-readable (i.e. only human readable) format;
- the user sends response information, called "response" hereinafter, which is related to the content of the challenge;
- the system checks the response with the challenge.

[0005] One aim of the present invention is to enhance the security level of systems or services. To that end it is, according to the invention, preferred that the challenge (message, text) comprises an (explicit) response instruction, hereinafter called "instruction", w.r.t. the response to be sent by the user to the system, after which the system checks the response, taking into account the semantic content, hereinafter called "content", of the relevant instruction given by means of the challenge message.

[0006] It is preferred that the content of the instruction will be variable per session.

[0007] Moreover, it is preferred that the content of the instruction refers to a user identifier or any information which only can be given by the user, e.g. a user password, possibly supplemented with less secure information such as the user's ZIP code, age etc.

EXEMPLARY EMBODIMENT

[0008] The invention will be discussed more in detail using an exemplary embodiment of a system in which the method according to the invention can be performed, referring to figure 1 which shows such a system.

[0009] Figure 1 shows a terminal 1, comprising a keyboard 2 and a display 3. The mobile 1 is capable to communicate with a system 5 via a network 4, and to make use of a service which is hosted at that system 5. For logging in to that service, a challenge-response session must be gone through, which comprises that the system (i.e. the service or server) outputs a challenge message or text in bitmap or any other non-computer-readable format, which is displayed on the terminal display 3. To minimize the chance that any (intruding) system might still be able to read (e.g. using OCR software, which is able to convert graphic information into computer readable - e.g. ASCII - characters), interpret and (mis)use the challenge message, it is preferred that the characters of the challenge text are deformed or distorted; as can be seen in figure 1.

[0010] Different from prior art "captcha" based methods, wherein only a - graphically displayed and distorted - word or number is displayed without any further instruction (besides any standard instruction, outside the proper captcha field, e.g. the instruction to read and type over the displayed word or number within the captcha field), in this new method according the present invention the challenge message itself comprises a response instruction, which instruction has to be effected by the user. In figure 1 this instruction reads: "Enter your PIN in inverse order". Another instruction could be: "Add your ZIP code to your PIN code" or similar instructions. So the (graphically displayed) challenge message comprises a (not standard) instruction (1) which refers to information which only can be known by the user, i.e. is user specific, e.g. the user's PIN code, and which may or may not be combined with not-confidential user information (like ZIP code etc.).

[0011] The user enters the requested response information into an input field 6 and sends it to the system 5. In the case of the challenge message "Enter your PIN in inverse order", the system checks the response, e.g. "0987CBA4321", with the challenge, the semantic content of which is: <PIN characters, inverse order>. When the system knows (from an earlier registration of the user) that the user's PIN is "1234ABC7890", the system will record the PIN characters, invert their order and compare the result with the user's PIN to check whether the authentication is correct.

[0012] In the same way, if the challenge message is "Add your ZIP code to your PIN code", the system knows that the semantics of this is <PIN characters + ZIP characters>, which can be checked by the system. Besides operations like "invert characters" (example 1), "add characters" (example 2) etc., also arithmetical operations may be performed, e.g. "Add 1 to the each numeral of your PIN". Such arithmetical instructions, however, may be less user friendly. In any case, the system checks the response with the challenge, taking into account the (semantic) content of the relevant challenge instruction.

[0013] To enhance the security, it is preferred that the content of the instruction is variable per session, e.g. is varied between several instruction like "Enter your PIN in inverse order", "Add your ZIP code to your PIN code", "Add 1 to the each numeral of your PIN", etc.

Intuition Machines Exhibit 1004, Page 120 of 376

Claims

1. Method for performing a challenge-response session between a system (5) and a user, comprising the steps of:

   - the system outputs challenge information, called "challenge" hereinafter, which is displayed (3) in bitmap, graphic or any other non-computer-readable format;
   - the user sends response information (6), called "response" hereinafter, which is related to the content of the challenge;
   - the system checks the response with the challenge;

   wherein the challenge comprises a response instruction, hereinafter called "instruction", w.r.t. the response to be sent by the user to the system, and the system checks the response with the challenge, taking into account the semantic content, hereinafter called "content", of the relevant instruction.

2. Method according to claim 1, the content of the instruction being variable per session.

3. Method according to any preceding claim, the content of the instruction being related to a user identifier, e.g. a user password.

4. System (5) for performing a challenge-response session with a user, using the method according to any of claims 1 - 3.

5. Software program means for performing a method according to any of claims 1 - 3.

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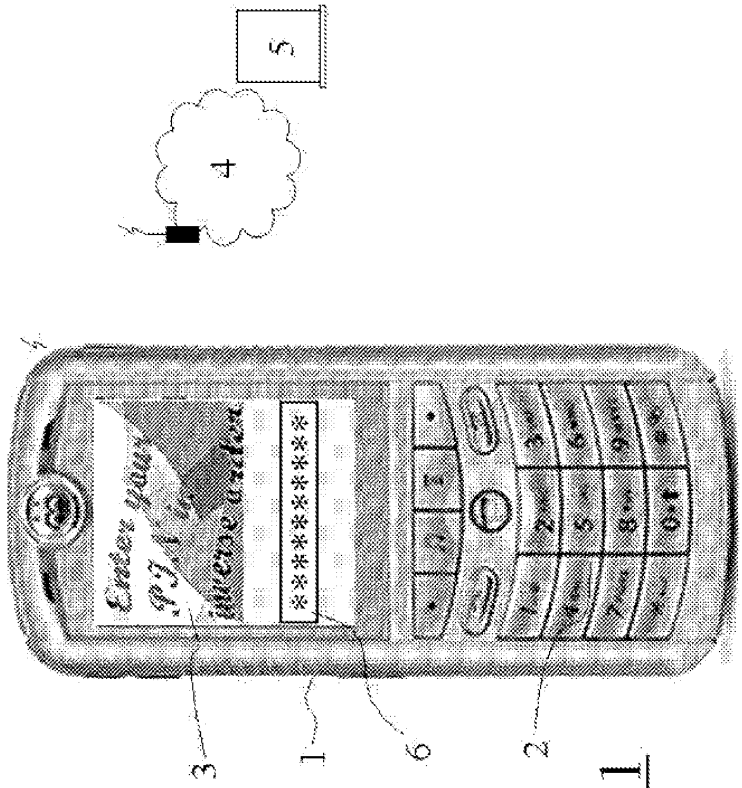


FIG. 1

Intuition Machines Exhibit 1004, Page 122 of 376

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EUROPEAN SEARCH REPORT

Application Number
EP 07 11 7788

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2007/036934 A (RSA SECURITY INC [US]; KLEIN AMIT [IL]; HELED RONEN [IL]) 5 April 2007 (2007-04-05) * page 1, line 17 - line 25 *	1-5	INV. G06F21/20
X	NICOLAS HÖNIG; JAN (COMMENTATOR AT NICOLAS HÖNIG WEB PAGE): "Can captchas be fun?"[Online] 6 July 2007 (2007-07-06), XP002473164 Retrieved from the Internet: URL:http://www.nicolashoening.de/?blog&nr=63> [retrieved on 2008-03-14] * page 1, line 1 - page 4, line 9 * * page 4, line 25 - line 32 *	1-5	
X	US 2007/124201 A1 (HU HUBERT C [US] ET AL) 31 May 2007 (2007-05-31) * paragraph [0016] - paragraph [0017] * * paragraph [0094] - paragraph [0097] *	1-5	

TECHNICAL FIELDS SEARCHED (IPC)

G06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	17 March 2008	Pinto, Raúl

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17-03-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007036934 A	05-04-2007	NONE	
US 2007124201 A1	31-05-2007	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

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PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 15 OCT 2009
Applicant's or agent's file reference JNG 2009-1PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 09/47413	International filing date *(day/month/year)* 15 June 2009 (15.06.2009)
Applicant GROSS, JOHN NICHOLAS	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 8270

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference JNG 2009-1PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 09/47413	International filing date *(day/month/year)* 15 June 2009 (15.06.2009)	(Earliest) Priority Date *(day/month/year)* 23 June 2008 (23.06.2008)
Applicant GROSS, JOHN NICHOLAS		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Reasons for Lack of Unity of Invention:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I: claims 1-42, 45-59, 61-64 are directed to a method/system of identifying a source of data input to a computing system comprising receiving/processing speech utterance from an entity and generating a determination of whether the speech utterance originated from a machine or a human.

-see extra sheet-

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-42, 45-59, 61-82, 85-94, 96-97

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

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A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 15/00 (2009.01)
USPC - 704/200
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 704/200

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 704/235-240,246,260

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST: (PGPB,USPT,EPAB,JPAB); Google Scholar; Google Patent
Search Terms: speech, speak, spoken, utterance, voice, vocal, verbal, prosody, challenge text, challenge response, challenge question, CAPTCHA, computer speech, human speech, process, analyze, determine, random, confirmation, confirm, acoustic characteristic

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0114137 A1 (SAITO et al.) 26 May 2005 (26.05.2005), abstract and para [0012]-[0013], [0021]-[0022], [0024], [0039], [0075]-[0086], [0089], [0091]-[0096], [0098]-[0105], [0124]-[0135], [0137]-[0149], [0153], [0162]-[0163], [0165]-[0173].	1-6, 9-12, 14-18, 22-23, 35-39, 42, 45-51, 53, 61-62, 65-66, 70-82, 85-86, 88, 94, 96
--- Y		7-8, 13, 19-21, 52, 67-69, 87, 89-91
X	US 2004/0254793 A1 (HERLEY et al.) 16 December 2004 (16.12.2004), abstract and para [0005]-[0007], [0011]-[0013], [0015], [0037], [0039]-[0043], [0045], [0049]-[0050], [0052], [0055]-[0057], [0061], [0063], [0068], [0075], [0086], [0088].	24-25, 27-34, 40-41, 54-55, 57-59, 63-64
--- Y		26, 56, 87, 89-91
X	US 2007/0271830 A1 (HOLT et al.) 29 November 2007 (29.11.2007), abstract and para [0044]-[0045], [0047], [0060]-[0063], [0070], [0094].	92-93, 97

☒ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 September 2009 (25.09.2009)	15 OCT 2009
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0033145 A1 (PETRUSHIN) 13 February 2003 (13.02.2003), abstract and para [0105]-[0111], [0360]-[0367], [0408].	7-8, 13, 52
Y	US 2003/0163316 A1 (ADDISON et al.) 28 August 2003 (28.08.2003), abstract and para [0008], [0010]-[0011], [0047]-[0049], [0078], [0179]-[0186], [0189]-[0191].	19-21, 67-69
Y	US 2005/0159950 A1 (ROTH et al.) 21 July 2005 (21.07.2005), abstract and para [0202]-[0203], [0332]-[0336], [0624].	26, 56
A	US 2003/0004719 A1 (YUSCHIK) 02 January 2003 (02.01.2003), entire document.	1-42, 45-59, 61-82, 85-94, 96-97

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

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Continuation of Box III: Observations where unity of invention is lacking

Group II: claims 43-44, 60 are directed to a method/system comprising storing a voice print at the computing system based on said first speech utterance being converted into recognized speech data and controlling whether the second entity is allowed to access an account and/or data by comparing the voice print to the second recognized speech data.

Group III: claims 65-82, 85-94, 96-97 are directed to a method/system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising selecting a challenge item.

Group IV: claims 83-84, 95 are directed to a method/system comprising providing a first set of diphones using the computing system and generating an articulation score using the computing system based on a machine text to speech (TTS) system articulation of each of the first set of diphones.

The inventions listed as Groups I - IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the Group I invention is a method/system of identifying a source of data input to a computing system comprising receiving/processing speech utterance from an entity and generating a determination of whether the speech utterance originated from a machine or a human.

The special technical feature of the Group II invention a method/system comprising storing a voice print at the computing system based on said first speech utterance being converted into recognized speech data and controlling whether the second entity is allowed to access an account and/or data by comparing the voice print to the second recognized speech data.

The special technical feature of the Group III invention is a method/system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising selecting a challenge item.

The special technical feature of the Group IV invention a method/system comprising providing a first set of diphones using the computing system and generating an articulation score using the computing system based on a machine text to speech (TTS) system articulation of each of the first set of diphones.

None of these special technical features are common to the other groups, nor do they correspond to a special technical feature in the other groups. Therefore, unity of invention is lacking.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: JOHN GROSS
2030 ADDISON ST.
SUITE 610
BERKELEY, CA 94704

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	15 OCT 2009
Applicant's or agent's file reference: JNG 2009-1PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 09/47413	15 June 2009 (15.06.2009)	23 June 2008 (23.06.2008)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06F 15/00 (2009.01)
USPC - 704/200

Applicant GROSS, JOHN NICHOLAS

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	25 September 2009 (25.09.2009)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (July 2009)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

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Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed

   ☐ together with the international application in electronic form

   ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☒ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☐ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

Reasons for Lack of Unity of Invention:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I: claims 1-42, 45-59, 61-64 are directed to a method/system of identifying a source of data input to a computing system comprising receiving/processing speech utterance from an entity and generating a determination of whether the speech utterance originated from a machine or a human.

Group II: claims 43-44, 60 are directed to a method/system comprising storing a voice print at the computing system based on said first speech utterance being converted into recognized speech data and controlling whether the second entity is allowed to access an account and/or data by comparing the voice print to the second recognized speech data.

Group III: claims 65-82, 85-94, 96-97 are directed to a method/system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising selecting a challenge item.

Group IV: claims 83-84, 95 are directed to a method/system comprising providing a first set of diphones using the computing system and generating an articulation score using the computing system based on a machine text to speech (TTS) system articulation of each of the first set of diphones.

The inventions listed as Groups I - IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the Group I invention is a method/system of identifying a source of data input to a computing system comprising receiving/processing speech utterance from an entity and generating a determination of whether the speech utterance originated from a machine or a human.

The special technical feature of the Group II invention a method/system comprising storing a voice print at the computing system based on said first speech utterance being converted into recognized speech data and controlling whether the second entity is allowed to access an account and/or data by comparing the voice print to the second recognized speech data.

The special technical feature of the Group III invention is a method/system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising selecting a challenge item.

The special technical feature of the Group IV invention a method/system comprising providing a first set of diphones using the computing system and generating an articulation score using the computing system based on a machine text to speech (TTS) system articulation of each of the first set of diphones.

None of these special technical features are common to the other groups, nor do they correspond to a special technical feature in the other groups. Therefore, unity of invention is lacking.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. 1-42, 45-59, 61-82, 85-94, 96-97

Form PCT/ISA/237 (Box No. IV) (July 2009)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
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Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7-8, 13, 19-21, 26, 52, 56, 67-69, 87, 89-91	YES
	Claims	1-6, 9-12, 14-18, 22-25, 27-42, 45-51, 53-55, 57-59, 61-66, 70-82,	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-42, 45-59, 61-82, 85-94, 96-97	NO
Industrial applicability (IA)	Claims	1-42, 45-59, 61-82, 85-94, 96-97	YES
	Claims	None	NO

2. Citations and explanations:
1. Statement Cont'd.

Novelty (N)	Claims		YES
	Claims	85-86, 88, 92-94, 96-97	NO

Claims 1-6, 9-12, 14-18, 22-23, 35-39, 42, 45-51, 53, 61-62, 65-66, 70-82, 85-86, 88, 94, 96 lack novelty under PCT Article 33(2) as being anticipated by US 2005/0114137 A1 to Saito, et al. (hereinafter 'Saito').

As to claim 1, Saito teaches a method of identifying a source of data input to a computing system comprising: (a) receiving speech utterance from an entity related to randomly selected challenge text; wherein said challenge text represents a selected set of one more contiguous words which when articulated have a measurable difference in acoustical characteristics between a reference human voice and a reference computer synthesized voice that exceeds a target threshold (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (b) processing said speech utterance with said computing system to compute first acoustical characteristics of said entity (para [0137], [0141]-[0143]); (c) generating a determination of whether said speech utterance originated from a machine or a human (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 2, Saito teaches a method further including the steps: (a) identifying a first computer synthesized voice that best correlates to said entity (para [0100], [0102]-[0104]); and (b) selecting said randomly selected challenge text based on an identity of said first entity so as to maximize a difference in acoustical characteristics (para [0137], [0141]-[0144]).

As to claim 3, Saito teaches a method further including a step: wherein said challenge text is also selected in part based on a confirmation from a human listener that an articulation of such challenge text originated from a computer synthesized voice (para [0085]-[0086], [0141]-[0143], [0153]).

As to claim 4, Saito teaches a method further including steps: (a) soliciting utterances from a plurality of separate computing machines to determine their respective acoustical characteristics (para [0137]-[0143]); and (b) storing said plurality of associated acoustical characteristics in a database of known computing entities (para [0039], [0085], [0142], [0145]).

As to claim 5, Saito teaches a method wherein multiple samples of individual challenge sentences are collected (para [0012]-[0013], [0084]).

As to claim 6, Saito teaches a method wherein said challenge text is selected in part based on a difference in time for rendering such text into audible form by a human and a computing machine (para [0103]-[0104], [0137], [0143]).

As to claim 9, Saito teaches a method further including a step: performing a separate automated visual challenge test so that both visual processing and articulation processing is considered in one or more of said determinations (para [0078], [0080]-[0084]).

As to claim 10, Saito teaches a method wherein a prosody score associated with said speech utterance is also considered during step (c) (para [0094]-[0096], [0098]-[0100]).

As to claim 11, Saito teaches a method wherein said first test text data consists of a sentence presented in visual form for the entity to articulate (para [0131]-[0135]).

As to claim 12, Saito teaches a method wherein said first test text data consists of a sentence presented in audible form for the entity to repeat (para [0166]-[0168]).

As to claim 14, Saito teaches a method further including a step: selecting one or more second computing systems for separately performing steps (d) and/or (f) based on a performance and/or cost requirement (para [0076]-[0081], [0137]-[0143]).

As to claim 15, Saito teaches a method wherein said one or more second computing systems are selected based on a language spoken by the entity (para [0039], [0137]-[0143]).
(See Supplemental Box)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
Box No. V --- Reasoned Statement
2. Citations and Explanations:

As to claim 16, Saito teaches a method wherein said one or more second computing systems are selected based on an IP address or geographic region associated with the entity (para [0125]-[0129]).

As to claim 17, Saito teaches a method wherein said one or more second computing systems are selected based on an auction process in which such one more second computing systems bid for the right to process said speech utterance (para [0130]-[0135], [0140]).

As to claim 18, Saito teaches a method wherein said challenge text is selected based on a detected accent and/or geographic region associated with the entity (para [0039], [0078]-[0080]).

As to claim 22, Saito teaches a method wherein discontinuities between phonemes and pauses between words are also measured during step (b) (para [0081]-[0086], [0089]).

As to claim 23, Saito teaches a method wherein processing is distributed so that at least step (a) is performed on a portable computing device and the remaining steps are performed on a server computing device (para [0075]-[0077], [0125]-[0127]).

As to claim 35, Saito teaches a method of identifying a source of data input to a computing system comprising: (a) receiving speech utterance from an entity related to randomly selected challenge text (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (b) processing said speech utterance with said computing system to compute first acoustical characteristics of said entity (para [0137], [0141]-[0143]); (c) comparing said first acoustical characteristics with at least one reference set of acoustical characteristics for a human voice to identify a first score for said speech utterance (para [0094]-[0096], [0098]-[0100], [0102]-[0103]); (d) comparing said first acoustical characteristics with at least one reference set of acoustical characteristics for a computer synthesized voice in parallel during step (c) to generate a second score for said speech utterance (para [0102]-[0103], [0137]-[0143]); (e) generating a determination of whether said speech utterance originated from a machine or a human based on said first score and said second score (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 36, Saito teaches a method wherein steps (c) and (d) are done by separate entities using separate computing machines (para [0076]-[0081], [0125], [0137]-[0143]).

As to claim 37, Saito teaches a method wherein said separate entities participate in an auction to identify said first and/or second scores (para [0095]-[0096], [0130]-[0135], [0140]).

As to claim 38, Saito teaches a method of identifying a source of data input to a computing system comprising: (a) selecting first test text data to be articulated as a speech utterance by an entity providing input to the computing system (para [0078]-[0080], [0082]-[0083]); (b) receiving said speech utterance from the entity (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (c) generating first recognized speech data from the speech utterance corresponding to said first test text data (para [0078]-[0082]); (d) processing said first recognized speech data with said computing system to generate an initial determination of whether said speech utterance originated from a machine or a human (para [0039], [0142]-[0143], [0169]-[0170]); (e) optionally repeating steps (a) through (d) based on a confidence score for said initial determination using second test text data, which second test text data is derived dynamically from content presented in said first recognized speech data (para [0039], [0102]-[0103], [0137]-[0143], [0165]); (f) processing said second recognized speech data with said computing system to generate a final determination of whether said speech utterance originated from a machine or a human (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 39, Saito teaches a challenge system for identifying a source of data input to a computing system comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) receive speech utterance from an entity related to randomly selected challenge text; wherein said challenge text represents a selected set of one more contiguous words which when articulated have a measurable difference in acoustical characteristics between a reference human voice and a reference computer synthesized voice that exceeds a target threshold (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (b) process said speech utterance with said computing system to compute first acoustical characteristics of said entity (para [0137], [0141]-[0143]); (c) generate a determination of whether said speech utterance originated from a machine or a human (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 42, Saito teaches a system to identify a source of data input to a computing system comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) receive speech utterance from an entity related to randomly selected challenge text (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (b) process said speech utterance with said computing system to compute first acoustical characteristics of said entity (para [0137], [0141]-[0143]); (c) compare said first acoustical characteristics with at least one reference set of acoustical characteristics for a human voice to identify a first score for said speech utterance (para [0094]-[0096], [0098]-[0100], [0102]-[0103]); (d) compare said first acoustical characteristics with at least one reference set of acoustical characteristics for a computer synthesized voice in parallel during step (c) to generate a second score for said speech utterance (para [0102]-[0103], [0137]-[0143]); (e) generate a determination of whether said speech utterance originated from a machine or a human based on said first score and said second score (para [0039], [0142]-[0143], [0169]-[0170]).

(See Next Supplemental Box)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/47413

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Precedding Supplemental Box
Box No. V --- Reasoned Statement
2. Citations and Explanations:

As to claim 45, Saito teaches a method of identifying a source of data input to a computing system using prosodic elements of speech comprising: (a) presenting a challenge item to an entity, which challenge item is associated with a reference set of words and associated reference prosodic scores (para [0078]-[0080], [0096], [0098], [0100]-[0102]); (b) receiving speech utterance from an entity related to said challenge item including an input set of words (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (c) processing said speech utterance with said computing system to compute input prosodic scores of said input set of words (para [0082], [0084], [0096], [0098]); (d) comparing said input prosodic scores and said reference prosodic scores (para [0096], [0098], [0100]-[0102], [0137], [0143]); (e) generating a determination of whether said speech utterance originated from a machine or a human based on step (d) (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 46, Saito teaches a method further including the step: recognizing said input set of words to compute an additional prosodic score based on an identity of said input set of words, and comparing said additional prosodic words to a second reference prosodic score related to a content of said reference set of words (para [0137], [0143], [0162]-[0163]).

As to claim 47, Saito teaches a method wherein said challenge item is supplemented with visual cues, said visual cues being adapted to induce said reference prosodic scores (para [0078], [0080]-[0084]).

As to claim 48, Saito teaches a method wherein said visual cues are selected from a database of visual cues determined by reference to a database of human vocalizations to most likely result in said reference prosodic scores (para [0024], [0080]-[0084]).

As to claim 49, Saito teaches a method of identifying a source of data input to a computing system using prosodic elements of speech comprising: (a) presenting a challenge item to an entity, which challenge item is associated with a reference set of words and associated prosodic characteristics (para [0078]-[0080], [0096], [0098], [0100]-[0102]); (b) receiving speech utterance from an entity related to said challenge item; wherein said reference set of words represents a selected set of one more contiguous words which when vocalized have a measurable difference in prosodic characteristics between a reference human voice and a reference computer synthesized voice that exceeds a target threshold (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (c) processing said speech utterance with said computing system to compute first prosodic characteristics of said entity (para [0082], [0084], [0096], [0098]); (d) generating a determination of whether said speech utterance originated from a machine or a human based on step (c) (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 50, Saito teaches a method further including the steps: (a) estimating a first computer synthesized voice that best correlates to said entity (para [0092]-[0094], [0100], [0102]-[0104]); and (b) selecting said challenge item based on an identity of said first entity so as to maximize a difference in prosodic characteristics (para [0137], [0141]-[0144]).

As to claim 51, Saito teaches a method further including steps: (a) soliciting utterances from a plurality of separate computing machines to determine their respective prosodic characteristics (para [0137]-[0143]); and (b) storing said plurality of associated prosodic characteristics in a database of known computing entities (para [0039], [0085], [0142], [0145]).

As to claim 53, Saito teaches a method wherein visual cues are added to induce said entity to vocalize said reference set of words using said reference human voice (para [0078], [0080]-[0084], [0104]-[0105]).

As to claim 61, Saito teaches a challenge system for identifying a source of data input to a computing system using prosodic elements of speech comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) present a challenge item to an entity, which challenge item is associated with a reference set of words and associated reference prosodic scores (para [0078]-[0080], [0096], [0098], [0100]-[0102]); (b) receive speech utterance from an entity related to said challenge item including an input set of words (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (c) process said speech utterance with said computing system to compute input prosodic scores of said input set of words (para [0082], [0084], [0096], [0098]); (d) compare said input prosodic scores and said reference prosodic scores (para [0096], [0098], [0100]-[0102], [0137], [0143]); (e) generate a determination of whether said speech utterance originated from a machine or a human based on step (d) (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 62, Saito teaches a challenge system for identifying a source of data input to a computing system using prosodic elements of speech comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) present a challenge item to an entity, which challenge item is associated with a reference set of words and associated prosodic characteristics (para [0078]-[0080], [0096], [0098], [0100]-[0102]); (b) receive speech utterance from an entity related to said challenge item; wherein said reference set of words represents a selected set of one more contiguous words which when vocalized have a measurable difference in prosodic characteristics between a reference human voice and a reference computer synthesized voice that exceeds a target threshold (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (c) process said speech utterance with said computing system to compute first prosodic characteristics of said entity (para [0082], [0084], [0096], [0098]); (d) generate a determination of whether said speech utterance originated from a machine or a human based on step (c) (para [0039], [0142]-[0143], [0169]-[0170]).

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As to claim 65, Saito teaches a method embodied in a computer readable medium for generating challenge data to be used for accessing data and/or resources of an electronic computing system comprising: (a) automatically generating a candidate challenge sentence from a first set of words and phrases using the computing system (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (b) automatically generating at least one first utterance from a first machine text to speech system for said candidate challenge sentence using the computing system, said at least one first utterance including first acoustical characteristics (para [0124], [0133], [0137]-[0144]); (c) automatically generating at least one second utterance from a human speaker for said candidate challenge sentence using the computing system, said at least one second utterance including second acoustical characteristics (para [0094]-[0096], [0098]-[0100], [0102]-[0103]); (d) automatically determining a difference in said first and second acoustical characteristics using the computing system to determine a challenge sentence acoustic score for said candidate challenge sentence (para [0102]-[0103], [0137]-[0143]); (e) automatically storing said at least one first utterance and said at least one second utterance and said candidate challenge sentence in a challenge item database using the computing system for use by an utterance based challenge system when said candidate challenge sentence acoustic score exceeds a target threshold (para [0130], [0137], [0142]-[0143], [0145]-[0149]).

As to claim 66, Saito teaches a method wherein acoustical features of said first utterance and said second utterance are measured, and regions of greatest difference are identified to be used as discriminators (para [0137], [0141]-[0144], [0153]).

As to claim 70, Saito teaches a method further including a step: compiling a machine articulation statistical language model based on a plurality of first utterances (para [0091]-[0094], [0153]).

As to claim 71, Saito teaches a method further including a step: compiling a dialog of multiple challenge sentences based on questions and expected answers to be provided by an entity (para [0124]-[0127], [0132]-[0135]).

As to claim 72, Saito teaches a method further including a step: generating a challenge scenario comprised of said candidate challenge sentence and one or more visual and/or text cues, which challenge scenario is stored in said database (para [0078], [0080]-[0084]).

As to claim 73, Saito teaches a method further including a step: processing said words and phrases with a natural language engine to generate said candidate challenge sentence (para [0021], [0168]-[0169], [0171]-[0172]).

As to claim 74, Saito teaches a method further including a step: annotating said candidate challenge sentence with prosodic elements to generate an expected prosodic pronunciation of said words and phrases (para [0080], [0142]-[0143]).

As to claim 75, Saito teaches a method further including a step: annotating said candidate challenge sentence with first prosodic elements found in said at least one first utterance and with second prosodic elements found in said least one second utterance (para [0080], [0142]-[0143]).

As to claim 76, Saito teaches a method further including a step: determining a difference in said first and second prosodic elements to determine a challenge sentence prosodic score for said candidate challenge sentence (para [0102]-[0103], [0137]-[0143]).

As to claim 77, Saito teaches a method further including a step: annotating said candidate challenge sentence with first content elements for said visual and/or text cues found in said at least one first utterance and with second content elements for said visual and/or text cues found in said least one second utterance (para [0078], [0080]-[0086]).

As to claim 78, Saito teaches a method further including a step: determining a difference in said first and second content elements to determine a challenge sentence content score for said candidate challenge sentence (para [0080]-[0086], [0137]-[0143]).

As to claim 79, Saito teaches a method wherein a time required by the human speaker to generate said first utterance is measured (para [0081]-[0086], [0089]).

As to claim 80, Saito teaches a method wherein a time required by the machine speaker to generate said second utterance is measured (para [0103]-[0104], [0137], [0143]).

As to claim 81, Saito teaches a method where said first set of words and phrases are automatically extracted from an electronic corpus (para [0022], [0141], [0173]).

As to claim 82, Saito teaches a method further including a step: processing input speech by an entity using said challenge item database to distinguish between a human and a machine synthesized voice (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 85, Saito teaches a method embodied in a computer readable medium of selecting challenge data to be used for accessing data and/or resources of a computing system comprising: (a) selecting a candidate challenge item which can include text words and/or visual images (para [0078]-[0084], [0100], [0141]-[0143]); (b) measuring first acoustical characteristics of a computer synthesized utterance when articulating challenge content associated with said candidate challenge item (para [0124], [0133], [0137]-[0144]); (c) measuring second acoustical characteristics of a human utterance when articulating said challenge content (para [0094]-[0096], [0098]-[0100], [0102]-[0103]); (d) generating a challenge item score based on measuring a difference in said first and second acoustical characteristics (para [0102]-[0103], [0137]-[0143]); (e) designating said candidate challenge item as a reference challenge item when said challenge item score exceeds a target threshold (para [0130], [0137], [0142]-[0143], [0145]-[0149]).

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As to claim 86, Saito teaches a method further including a step: processing input speech by an entity using said reference challenge item to distinguish between a human and a machine synthesized voice (para [0039], [0142]-[0143], [0169]-[0170]).

As to claim 88, Saito teaches a method wherein said challenge item score is also based on prosodic elements associated with said text words and/or visual images and which are identified and measured in said computer synthesized utterance and human utterance respectively (para [0080]-[0086], [0096], [0098]).

As to claim 94, Saito teaches a system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising: one or more software routines embodied in a computer readable medium adapted to cause the computing system to: (a) automatically generate a candidate challenge sentence from a first set of words and phrases (para [0078]-[0080], [0082]-[0083], [0100], [0141]-[0143]); (b) automatically generate at least one first utterance from a first machine text to speech system for said candidate challenge sentence, said at least one first utterance including first acoustical characteristics (para [0124], [0133], [0137]-[0144]); (c) automatically generate at least one second utterance from a human speaker for said candidate challenge sentence, said at least one second utterance including second acoustical characteristics (para [0094]-[0096], [0098]-[0100], [0102]-[0103]); (d) automatically determine a difference in said first and second acoustical characteristics to determine a challenge sentence acoustic score for said candidate challenge sentence (para [0102]-[0103], [0137]-[0143]); (e) automatically store said at least one first utterance and said at least one second utterance and said candidate challenge sentence in a challenge item database for use by an utterance based challenge system when said candidate challenge sentence acoustic score exceeds a target threshold (para [0130], [0137], [0142]-[0143], [0145]-[0149]).

As to claim 96, Saito teaches a system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising: one or more software routines embodied in a computer readable medium adapted to cause the computing system to: (a) select a candidate challenge item which can include text words and/or visual images (para [0078]-[0084], [0100], [0141]-[0143]); (b) measure first acoustical characteristics of a computer synthesized utterance when articulating challenge content associated with said candidate challenge item (para [0124], [0133], [0137]-[0144]); (c) measure second acoustical characteristics of a human utterance when articulating said challenge content (para [0094]-[0096], [0098]-[0100], [0102]-[0103]); (d) generate a challenge item score based on measuring a difference in said first and second acoustical characteristics (para [0102]-[0103], [0137]-[0143]); (e) designate said candidate challenge item as a reference challenge item when said challenge item score exceeds a target threshold (para [0130], [0137], [0142]-[0143], [0145]-[0149]).

Claims 24-25, 27-34, 40-41, 54-55, 57-59, 63-64 lack novelty under PCT Article 33(2) as being anticipated by US 2004/0254793 A1 to Herley, et al. (hereinafter 'Herley').
As to claim 24, Herley teaches a method of implementing a CATPCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) to identify a source of data input to a computing system comprising: (a) presenting an image CATPCHA to an entity, which image CAPTCHA includes one or more visually distorted words, phrases or images as a challenge item (para [0005]-[0006]); (b) receiving a speech utterance from an entity related to said challenge text (para [0037], [0041], [0049]); (c) processing said speech utterance to generate a determination of whether said speech utterance originated from a machine or a human (para [0037], [0042], [0056]).

As to claim 25, Herley teaches a method wherein said image CAPTCHA includes at least two distinct words (para [0005], [0049]).

As to claim 27, Herley teaches a method wherein said determination includes a second score based on recognizing said speech utterance to determine if said one or more visually distorted words, phrases or images are correctly identified (para [0005]-[0006], [0042], [0057], [0086]).

As to claim 28, Herley teaches a method wherein said image CAPTCHA is revealed in distinct stages which span a predetermined time period, and with each stage presenting additional visual information (para [0005]-[0007]).

As to claim 29, Herley teaches a method wherein a scoring during part (cc) takes into account a time required for the entity to determine said image CAPTCHA (para [0052], [0056]-[0057], [0088]).

As to claim 30, Herley teaches a method of identifying a source of data input to a computing system comprising: (a) associating a first challenge item with a first set of individual text descriptors; wherein said first set of text descriptors are based on feedback provided by a group of human reviewers (para [0005]-[0007], [0012]-[0013], [0037]); (b) associating a second challenge item with a second set of individual text descriptors; wherein said second set of individual text descriptors are also based on feedback provided by a group of human reviewers (para [0005]-[0007], [0012]-[0013], [0037], [0075]); (c) identifying at least a first reference correlation between at least a first reference text descriptor for said first challenge item and a second reference text descriptor for said second challenge item, including a probability that a human reviewer identifying said first reference text descriptor when presented with said first challenge item also provides said second reference text descriptor when presented with said second challenge item, or vice-versa (para [0005]-[0007], [0012], [0015], [0042]); (d) presenting the first challenge item to an entity as part of an automated access challenge adapted to distinguish humans from computing machines (para [0015], [0042], [0045], [0056]); (e) receiving speech utterance from said entity related to said first challenge item to determine a first input text descriptor (para [0037], [0041], [0049]); (f) presenting the second challenge item to said entity as part of said automated access challenge adapted to distinguish humans from computing machines (para [0056]-[0057], [0061], [0086]); (g) receiving speech utterance from said entity related to said second challenge item to determine a second input text descriptor (para [0037], [0041], [0049]); (h) comparing said first and second input text descriptors to identify said reference correlation between them as measured during step (c) (para [0015], [0039], [0045], [0086]); (i) generating a determination of whether said speech utterance originated from a machine or a human based on a value of said reference correlation (para [0045], [0056]-[0057], [0061], [0086]).
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As to claim 31, Herley teaches a method wherein said challenge items include an image (para [0005]-[0007]).

As to claim 32, Herley teaches a method wherein said challenge items include a question (para [0011]-[0012], [0015]).

As to claim 33, Herley teaches a method wherein said first and second challenge items are of different types, including a first type which includes an image, and.a second type which includes a question (para [0005]-[0007], [0011]-[0012], [0015]).

As to claim 34, Herley teaches a method wherein said first and second challenge items are selected based on a value of said reference correlation (para [0015], [0039], [0045], [0086]).

As to claim 40, Herley teaches a system for implementing a CATPCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) to identify a source of data input to a computing system comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) present an image CATPCHA to an entity, which image CAPTCHA includes one or more visually distorted words, phrases or images as a challenge item (para [0005]-[0006]); (b) receive a speech utterance from an entity related to said challenge text (para [0037], [0041], [0049]); (c) process said speech utterance to generate a determination of whether said speech utterance originated from a machine or a human (para [0037], [0042], [0056]).

As to claim 41, Herley teaches a system to identify a source of data input to a computing system comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) associate a first challenge item with a first set of individual text descriptors; wherein said first set of text descriptors are based on feedback provided by a group of human reviewers (para [0005]-[0007], [0012]-[0013], [0037]); (b) associate a second challenge item with a second set of individual text descriptors; wherein said second set of individual text descriptors are also based on feedback provided by a group of human reviewers (para [0005]-[0007], [0012]-[0013], [0037], [0075]); (c) identify at least a first reference correlation between at least a first reference text descriptor for said first challenge item and a second reference text descriptor for said second challenge item, including a probability that a human reviewer identifying said first reference text descriptor when presented with said first challenge item also provides said second reference text descriptor when presented with said second challenge item, or vice-versa (para [0005]-[0007], [0012], [0015], [0042]); (d) present the first challenge item to an entity as part of an automated access challenge adapted to distinguish humans from computing machines (para [0015], [0042], [0045], [0056]); (e) receive speech utterance from said entity related to said first challenge item to determine a first input text descriptor (para [0037], [0041], [0049]); (f) present the second challenge item to said entity as part of said automated access challenge adapted to distinguish humans from computing machines (para [0056]-[0057], [0061], [0086]); (g) receive speech utterance from said entity related to said second challenge item to determine a second input text descriptor (para [0037], [0041], [0049]); (h) compare said first and second input text descriptors to identify said reference correlation between them as measured during step (c) (para [0015], [0039], [0045], [0086]); (i) generate a determination of whether said speech utterance originated from a machine or a human based on a value of said reference correlation (para [0045], [0056]-[0057], [0061], [0086]).

As to claim 54, Herley teaches a method of implementing a CATPCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) to identify a source of data input to a computing system comprising: (a) training the computing system with samples of human voices and computer synthesized voices articulating a set of reference challenge items (para [0049], [0063]); (b) receiving a speech utterance from an entity related to one of said set of reference challenge items (para [0037], [0041], [0055]); (c) determining with the trained computer system whether said speech utterance was vocalized by a machine or a human (para [0056], [0061], [0086]).

As to claim 55, Herley teaches a method including a step: using a set of human test subjects to identify whether a reference challenge item was vocalized by a human or a computer prior to using it in the training of the computing system (para [0055]-[0057]).

As to claim 57, Herley teaches a method of implementing a CATPCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) to identify a source of data input to a computing system comprising: (a) training the computing system with samples of human voices articulating a set of reference challenge items (para [0049], [0063]); (b) receiving a speech utterance from an entity related to one of said set of reference challenge items (para [0037], [0041], [0055]); (c) determining with the trained computer system whether said speech utterance was vocalized by a machine or a human; wherein said computing system uses one or more speech models that are optimized for identifying humans using said set of reference challenge items (para [0037], [0040]-[0043], [0056], [0061], [0086]).

As to claim 58, Herley teaches a method including a step: using a set of human test subjects to identify whether a reference challenge item was vocalized by a human or a computer prior to using it in the training of the computing system (para [0055]-[0057]).

As to claim 59, Herley teaches a method wherein said set of reference challenge items represent a selected set of one more contiguous words which when articulated have a difference in acoustical characteristics between a reference human voice and a reference computer synthesized voice that exceeds a target threshold as measured by a reference group of human listeners, and at least some of said acoustical characteristics are used to train said one or more speech models (para [0012], [0015], [0040]-[0041], [0049]-[0050]).

As to claim 63, Herley teaches a system for implementing a CATPCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) to identify a source of data input to a computing system comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) train the computing system with samples of human voices and computer synthesized voices articulating a set of reference challenge items (para [0049], [0063]); (b) receive a speech utterance from an entity related to one of said set of reference challenge items (para [0037], [0041], [0055]); (c) determine with the trained computer system whether said speech utterance was vocalized by a machine or a human (para [0056], [0061], [0086]).

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As to claim 64, Herley teaches a system for implementing a CATPCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) to identify a source of data input to a computing system comprising: one or more software routines implemented in a computer readable medium and adapted to cause the challenge system to: (a) train the computing system with samples of human voices articulating a set of reference challenge items (para [0049], [0063]); (b) receive a speech utterance from an entity related to one of said set of reference challenge items (para [0037], [0041], [0055]); (c) determine with the trained computer system whether said speech utterance was vocalized by a machine or a human; wherein said computing system uses one or more speech models that are optimized for identifying humans using said set of reference challenge items (para [0037], [0040]-[0043], [0056], [0061], [0086]).

Claims 92-93, 97 lack novelty under PCT Article 33(2) as being anticipated by US 2007/0271830 A1 to Holt, et al. (hereinafter 'Holt').

As to claim 92, Holt teaches a method embodied in a computer readable medium of selecting challenge data to be used for accessing data and/or resources of a computing system comprising: (a) defining a plurality of demographic groups, said demographic groups being based on age, sex and/or domicile (para [0044]-[0045], [0047]); (b) providing a plurality of CAPTCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) challenge items consisting of a combination of images and solicited utterances with the computing system (para [0061]-[0062], [0070]); (c) for each of said challenge items using the computing system to compare a first reference response of a machine entity and a second reference response provided by a representative of said demographic group (para [0061]-[0062], [0070], [0094]); (d) for each demographic group selecting an optimal set of CAPTCHA challenge items determined by the computing system to yield the greatest response difference over said machine entity (para [0044], [0060]-[0061], [0070], [0094]).

As to claim 93, Holt teaches a method further including a step: identifying a demographic group for an entity; and processing input speech by said entity using at least one of said optimal set of CAPTCHA challenge items for said demographic group to determine if it is a human or a machine synthesized voice (para [0044], [0060]-[0063], [0070], [0094]).

As to claim 97, Holt teaches a system for identifying challenge data to be used for accessing data and/or resources of a computing system comprising: one or more software routines embodied in a computer readable medium adapted to cause the computing system to: (a) define a plurality of demographic groups, said demographic groups being based on age, sex and/or domicile (para [0044]-[0045], [0047]); (b) provide a plurality of CAPTCHA (Completely Automatic Public Turing Test To Tell Humans And Computers Apart) challenge items consisting of a combination of images and solicited utterances (para [0061]-[0062], [0070]); (c) for each of said challenge items compare a first reference response of a machine entity and a second reference response provided by a representative of said demographic group (para [0061]-[0062], [0070], [0094]); (d) for each demographic group select an optimal set of CAPTCHA challenge items determined by the computing system to yield the greatest response difference over said machine entity (para [0044], [0060]-[0061], [0070], [0094]).

Claims 7-8, 13, 52 lack an inventive step under PCT Article 33(3) as being obvious over Saito in view of US 2003/0033145 A1 (Petrushin).

As to claim 7, Saito does not explicitly teach a method further including a step: granting or denying access to data and/or a data processing device based on the result of step (c), including a signup for an email account or a blog posting. However, Petrushin does teach a method further including a step: granting or denying access to data and/or a data processing device based on the result of step (c), including a signup for an email account or a blog posting (para [0360]-[0367]). It would have been obvious to one of ordinary skill in the art to utilize a method further including a step: granting or denying access to data and/or a data processing device based on the result of step (c), including a signup for an email account or a blog posting as taught by Petrushin in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved data and application access management and control.

As to claim 8, Saito does not explicitly teach a method further including a step: granting or denying access to an advertisement based on the result of step (c). However, Petrushin does teach a method further including a step: granting or denying access to an advertisement based on the result of step (c) (para [0360]-[0367]). It would have been obvious to one of ordinary skill in the art to utilize a method further including a step: granting or denying access to an advertisement based on the result of step (c) as taught by Petrushin in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved data and application access management and control.

As to claim 13, Saito does not explicitly teach a method wherein said first test text data consists of a question presented in visual form and further includes an image cue associated with said question as well as a separate set of acceptable responses presented in visual form. However, Petrushin does teach a method wherein said first test text data consists of a question presented in visual form and further includes an image cue associated with said question as well as a separate set of acceptable responses presented in visual form (para [0408]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein said first test text data consists of a question presented in visual form and further includes an image cue associated with said question as well as a separate set of acceptable responses presented in visual form as taught by Petrushin in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved data collection, aggregation and management.

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2. Citations and Explanations:

As to claim 52, Saito does not explicitly teach a method wherein multiple samples of individual challenge sentences are collected. However, Petrushin does teach a method wherein multiple samples of individual challenge sentences are collected (para [0105]-[0111]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein multiple samples of individual challenge sentences are collected as taught by Petrushin in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved data collection, aggregation and sampling.

Claims 19-21, 67-69 lack an inventive step under PCT Article 33(3) as being obvious over Saito in view of US 2003/0163316 A1 to Addison, et al. (hereinafter 'Addison').

As to claim 19, Saito does not explicitly teach a method further including a step: determining a set of sentences for inclusion as challenge text based on an articulation difficulty score for a computer synthesis engine. However, Addison does teach a method further including a step: determining a set of sentences for inclusion as challenge text based on an articulation difficulty score for a computer synthesis engine (para [0180]-[0186]). It would have been obvious to one of ordinary skill in the art to utilize a method further including a step: determining a set of sentences for inclusion as challenge text based on an articulation difficulty score for a computer synthesis engine as taught by Addison in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved challenge text determination and formation.

As to claim 20, Saito in view of Addison teaches the method of claim 19. Addison further teaches a method wherein said set of sentences are automatically generated based on a measured concatenation difficulty for a set of diphones (para [0008], [0010], [0047], [0078], [0179]).

As to claim 21, Saito in view of Addison teaches the method of claim 19. Addison further teaches a method wherein said set of sentences are extracted automatically from a corpus that includes web logs, newspapers, books and/or the Internet (para [0011], [0049], [0190]).

As to claim 67, Saito does not explicitly teach a method wherein differences in articulation are measured and scored on a diphone basis. However, Addison does teach a method wherein differences in articulation are measured and scored on a diphone basis (para [0047], [0078], [0179]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein differences in articulation are measured and scored on a diphone basis as taught by Addison in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved articulation and speech analysis and scoring.

As to claim 68, Saito in view of Addison teaches the method of claim 67. Addison further teaches teaches a method wherein said diphones are sorted according to their difference between human and machine articulation (para [0179]-[0186]).

As to claim 69, Saito in view of Addison teaches the method of claim 67. Addison further teaches teaches a method further including a step: selecting words and phrases from a corpus of text in accordance with a diphone score (para [0047]-[0049], [0078], [0189]-[0191]).

Claims 87, 89-91 lack an inventive step under PCT Article 33(3) as being obvious over Saito in view of Herley.

As to claim 87, Saito does not explicitly teach a method wherein said challenge item score is also based on one or more topics associated with said text words and/or visual images and which are identified and measured in said computer synthesized utterance and human utterance respectively. However, Herley does teach a method wherein said challenge item score is also based on one or more topics associated with said text words and/or visual images and which are identified and measured in said computer synthesized utterance and human utterance respectively (para [0005]-[0007], [0049]-[0050]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein said challenge item score is also based on one or more topics associated with said text words and/or visual images and which are identified and measured in said computer synthesized utterance and human utterance respectively as taught by Herley in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved challenge item score determination and analysis.

As to claim 89, Saito does not explicitly teach a method wherein said challenge item score is also based on a collaborative filtering score generated by measuring responses to a sequence of two or more of said candidate challenge items identified in said in said computer synthesized utterances and human utterances respectively. However, Herley does teach a method wherein said challenge item score is also based on a collaborative filtering score generated by measuring responses to a sequence of two or more of said candidate challenge items identified in said in said computer synthesized utterances and human utterances respectively (para [0005]-[0007], [0012], [0015], [0042], [0050], [0057], [0068]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein said challenge item score is also based on a collaborative filtering score generated by measuring responses to a sequence of two or more of said candidate challenge items identified in said in said computer synthesized utterances and human utterances respectively as taught by Herley in order to provide a speech synthesis system capable of providing a highly natural speech and capable of reproducing speech characteristics of a speaker flexibly and accurately by effectively utilizing patterns of actual speech accumulated in a database as taught by Saito capable of improved challenge item score determination and analysis.

(See Next Supplemental Box)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/47413

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
Precedding Supplemental Box
Box No. V --- Reasoned Statement
2. Citations and Explanations:

As to claim 90, Saito in view of Herley teaches the method of claim 89. Herley further teaches a method wherein said collaborative filtering score is derived by identifying at least a first reference correlation between at least a first reference text descriptor for a first challenge item and a second reference text descriptor for a second challenge item, including a probability that a human reviewer identifying said first reference text descriptor when presented with said first challenge item also provides said second reference text descriptor when presented with said second challenge item, or vice-versa (para [0005]-[0007], [0012], [0015], [0042]).

As to claim 91, Saito in view of Herley teaches the method of claim 89. Herley further teaches a method wherein said collaborative filtering score is derived by identifying at least a first reference correlation between a first challenge item presented in incomplete form, and a predicted response for completing said challenge item (para [0086], [0088]).

Claims 26, 56 lack an inventive step under PCT Article 33(3) as being obvious over Herley in view of US 2005/0159950 A1 to Roth, et al. (hereinafter 'Roth').

As to claim 26, Herley does not explicitly teach a method wherein said determination includes a first score based on computing acoustical characteristics of said speech utterance. However, Roth does teach a method wherein said determination includes a first score based on computing acoustical characteristics of said speech utterance (para [0202]-[0203], [0624]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein said determination includes a first score based on computing acoustical characteristics of said speech utterance as taught by Roth in order to provide an invention related to automatically determining whether a computer is in communication with a person or with another computer as taught by Herley capable of improved speech analysis, scoring and determination.

As to claim 56, Herley does not explicitly teach a method wherein said reference challenge items are ranked and sorted according to a score provided by said human test subjects, and further including a step: presenting said one of said set of reference challenge items based on said score. However, Roth does teach a method wherein said reference challenge items are ranked and sorted according to a score provided by said human test subjects, and further including a step: presenting said one of said set of reference challenge items based on said score (para [0332]-[0336]). It would have been obvious to one of ordinary skill in the art to utilize a method wherein said reference challenge items are ranked and sorted according to a score provided by said human test subjects, and further including a step: presenting said one of said set of reference challenge items based on said score as taught by Roth in order to provide an invention related to automatically determining whether a computer is in communication with a person or with another computer as taught by Herley capable of improved human interactivity, challenge determination and management.

Claims 1-42, 45-59, 61-82, 85-94, 96-97 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

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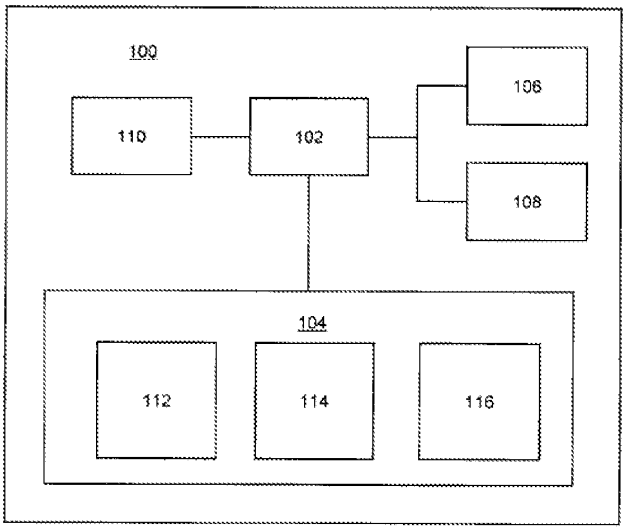
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(54) Title: METHODS AND SYSTEMS FOR GENERATING A SYMBOL IDENTIFICATION CHALLENGE FOR AN AUTOMATED AGENT



(57) Abstract: Methods, systems and machine readable medium storing a machine readable program for generating a representation of a symbol that presents an identification challenge for an automated agent are disclosed. A symbol is provided at a first system (100). A first version of the symbol is defined at the first system (100). A second version of the symbol is defined at the first system (100) by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively. The first view of the second version of the symbol is substantially similar to the first version of the symbol and different from the second view of the second version of the symbol.

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METHODS AND SYSTEMS FOR GENERATING A SYMBOL IDENTIFICATION CHALLENGE FOR AN AUTOMATED AGENT

Cross Reference To Related Application

The present application is a continuation in part of US Patent Application Serial No. 11/467,218 filed on August 25, 2006.

Field of the Invention

The present invention generally relates to data security and more particularly to methods and systems for generating a representation of a symbol that presents an identification challenge for an automated agent.

Background of the Invention

Sensitive data, such as for example, email addresses, phone numbers, residence addresses, usernames, user passwords, and/or credit card numbers are routinely stored on computer systems. Individuals often use personal computers to store address books containing personal data associated with different individuals. Web servers frequently store personal data associated with different groups, such as for example, clients and customers. In many cases, such computer systems are communicatively coupled to the Internet. Files including sensitive data are also routinely exchanged between different computer systems via the Internet.

Connectivity to the Internet often exposes computers systems to malicious autonomous software applications or automated agents. Automated agents are typically generated by autonomous software applications that operate as an agent for a user or a program. Real and/or virtual machines are used to generate automated agents that simulate human user activity and/or behavior to search for and gain illegal access to computer systems connected to the Internet, retrieve data from the computer systems, and generate databases of culled data for unauthorized use of the data by illegitimate users.

Automated agents typically consist of one or more sequenced operations. The sequence of operations can be executed by a real or virtual machine processor to enact the combined intent of one or more developers and/or

deployers of the sequence of operations. The size of the sequence of operations associated with an automated agent can range from a single machine coded instruction to a distributed operating system running simultaneously on multiple virtual processing units. An automated agent may consist of singular agents, independent agents, an integrated system of agents, and agents composed of sub-agents where the sub-agents themselves are individual automated agents. Examples of such automated agents include, but are not limited to, viruses, Trojans, worms, bots, spiders, and crawlers.

The increased use of computer systems that are communicatively coupled to the Internet to store and manipulate different forms of sensitive data has generated a need to format sensitive data into a form that is recognizable to a human user while posing an identification challenge to an automated agent. Storing and/or transmitting sensitive data in such a format enables human users to access the data for legitimate reasons while making it a challenge for automated agents to access the data for illegitimate reasons.

In some prior art systems, static images of sensitive data are represented in a format that includes one or more different noise components. For example, noise components in the form of various types of deformations and/or distortations are introduced into the static image representation of the sensitive data. For example, in a CAPTCHA (Completely Automated Public Turing Test To Tell Computers And Humans Apart) representation of data, noise is deliberately and/or strategically integrated into the static image representation of the sensitive data in an attempt to protect the sensitive data from automated agents that may gain unauthorized access to the data. Unfortunately, continuous advances in optical character recognition technologies have operated to defeat many of the different static image CAPTCHA representations of sensitive data.

Thus what is needed is a method and system for generating a representation of a symbol that presents an identification challenge for an automated agent that seeks to overcome one or more of the challenges and/or obstacles described above.

Summary of the Invention

One aspect of the invention provides a method of generating a representation of a symbol that presents an identification challenge for an automated agent. A symbol is provided at a first system. A first version of the symbol is defined at the first system. A second version of the symbol is defined at the first system by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively. The first view is substantially similar to the first version of the symbol and is different from the second view.

Another aspect of the invention provides a machine readable medium storing a machine executable program for generating a representation of a symbol that presents an identification challenge for an automated agent. The machine readable medium includes machine readable code for providing a symbol at a first system, machine readable code for defining a first version of the symbol at the first system, and machine readable code for defining a second version of the symbol at the first system by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively, the first view being substantially similar to the first version of the symbol and different from the second view.

Another aspect of the invention provides a system for generating a representation of a symbol that presents an identification challenge for an automated agent. The system includes means for providing a symbol at a first system, means for defining a first version of the symbol at the first system, and means for defining a second version of the symbol at the first system by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively, the first view being substantially similar to the first version of the symbol and different from the second view.

The foregoing and other features of the invention will become further apparent from the following detailed description of the presently preferred embodiments read in conjunction with the accompanying drawings. The detailed description and drawings are merely illustrative of the invention rather than limiting the scope of the invention being defined by the appended claims and equivalents thereof.

Brief Description of the Drawings

The present invention is illustrated by way of example and not limited in scope to the accompanying figures, in which like reference numerals indicate similar elements, and in which:

FIG. 1 is a block diagram of a system that may be used to implement one embodiment of generating a representation of a symbol that presents an identification challenge for an automated agent in accordance with the principles of the present invention;

FIG. 2 is a block diagram of one embodiment of a challenge symbol generator for generating a representation of a symbol that presents an identification challenge for an automated agent in accordance with the principles of the present invention;

FIG. 3 is an example of a symbol image having a block font format generated by one embodiment of a symbol image generation module for a symbol "1" in accordance with the principles of the present invention;

FIG. 4 is an example of a symbol image having a three dimensional block font format generated by one embodiment of a symbol image generation module for a symbol "1" in accordance with the principles of the present invention;

FIG. 5 is an example of a distorted symbol image generated by one embodiment of a symbol image generation module for a symbol "1" in accordance with the principles of the present invention;

FIG. 6 is an example of another distorted symbol image generated by one embodiment of a symbol image generation module for a symbol "1" in accordance with the principles of the present invention;

FIG. 7 is an example of a rendering of an original version of the symbol associated with the symbol image of FIG. 3 in the symbol coordinate system in accordance with the principles of the present invention;

FIG. 8 is an example of a table including a plurality of vectors that have been generated by one embodiment of the original symbol definition module to define the original version of the symbol associated with the symbol image of FIG. 3 in the symbol coordinate system in accordance with the principles of the present invention;

FIG. 9 is an example of a table including a plurality of vectors generated by one embodiment of the dynamic symbol definition module to define a dynamic version of the symbol associated with the original version of the symbol of FIG. 8 in the symbol coordinate system in accordance with the principles of the present invention;

FIG. 10(a)-(g) depicts illustrative examples of a series of different views of a rendering of the original version of the symbol defined in FIG. 8 in a viewing plane as the symbol coordinate system is rotated about the y-axis in accordance with the principles of the invention;

FIG. 11(a)-(g) depicts illustrative examples of a series of different symbol views of a rendering of the dynamic version of the symbol defined in FIG. 9 in a viewing plane as the symbol coordinate system is rotated about the y-axis in accordance with the principles of the present invention;

FIG. 12 is an example of a table including a plurality of vectors that have been generated by one embodiment of the dynamic symbol generation module to include a false symbol image as a symbol view in the dynamic version of the symbol of FIG. 9 in accordance with the principles of the present invention;

FIG. 13 is an example of a rendering of the false symbol image of the dynamic version of the symbol of FIG. 12 in accordance with the principles of the present invention;

FIG. 14 is an example of a table including a plurality of vectors generated by one embodiment of the dynamic symbol definition module to define a dynamic representation of the false symbol image of FIG. 12 in accordance with the principles of the present invention;

FIG. 15 (a)-(e) depicts illustrative examples of a series of different symbol views of a rendering of the dynamic version of the symbol as defined by both FIG. 9 and FIG. 14 in a viewing plane as the symbol coordinate system is rotated about the y-axis in accordance with the principles of the present invention;

FIG. 16 is a flowchart of one embodiment of a method of generating a representation of a symbol that presents a challenge for an automated agent in accordance with the principles of the present invention;

FIG. 17 is a flowchart of another embodiment of a method of generating a representation of a symbol that presents a challenge for an automated agent in accordance with the principles of the present invention; and

FIG. 18 is a block diagram of another system that may be used to implement one embodiment of generating a representation of a symbol that presents an identification challenge for an automated agent in accordance with the principles of the present invention.

Detailed Description of the Preferred Embodiments

Referring to FIG. 1, a block diagram of a system 100 that may be used to implement one embodiment of generating a representation of a symbol that presents an identification challenge for an automated agent in accordance with the principles of the present invention is shown. Examples of devices that may incorporate the system 100 include, but are not limited to, personal computers, personal device assistants, and cellular telephones. In one embodiment, the system 100 generally includes a processing unit 102 communicatively coupled to a memory 104, one or more input devices 106, one or more output devices 108, and a network interface 110.

The processing unit 102 generally includes a processor or controller. In one embodiment, the memory 104 includes one or more of a non-volatile memory, a volatile memory, and/or one or more storage devices. Examples of non-volatile memory include, but are not limited to, electrically erasable programmable read only memory (EEPROM) and read only memory (ROM). Examples of volatile memory include, but are not limited to, static random

access memory (SRAM), and dynamic random access memory (DRAM). Examples of storage devices include, but are not limited to, hard disk drives, compact disc drives, digital versatile disc drives, and flash memory devices. Examples of input devices 106 include, but are not limited to, a keyboard, a scanner, and a mouse. Examples of output devices 108 include, but are not limited to, a display device and a printer. In one embodiment, the processing unit 102 is communicatively coupled to a touch-sensitive display device. The touch-sensitive display device operates as both an input device 106 and an output device 108. In one embodiment, the network interface 110 is an Internet interface port. In one embodiment, the system 100 can be communicatively coupled to another computing device via the network interface 110.

In one embodiment, the memory 104 generally includes an operating system 112 and a challenge symbol generator 114. Examples of operating systems that may be used include, but are not limited to, versions of Microsoft Windows ® operating systems, versions of Java virtual machines, versions of Linux, versions of Apple Machintosh ® operating systems, different types of embedded operating systems (such as for example Palm OS ®), mainframe operating systems (such as for example Unix®), and proprietary operating systems (such as for example, IRIX). Additional examples of operating systems include distributed virtual operating systems that can be deployed using a wire protocol (such as for example TCP/IP), a message protocol (such as for example HTTP), any number of formatting standards (such as for example HTTP and SVG), and scripting languages (such as for example Javascript).

In one embodiment, the memory includes a web browser 116. Examples of web browsers 116 that may be used include, but are not limited to, Firefox® and Internet Explorer®. In alternative embodiments, the memory 104 may include additional application modules that facilitate the operation of the system 100. The processing unit 102 generally retrieves and executes machine readable instructions or software programs that are stored in the memory 104.

Referring to FIG. 2 a block diagram of one embodiment of a challenge symbol generator 114 for generating a representation of a symbol that presents

an identification challenge for an automated agent in accordance with the principles of the present invention is shown. The challenge symbol generator 114 generally includes a symbol image generation module 202, an original symbol definition module 204, a dynamic symbol definition module 206, and a challenge symbol view generation module 208. In one embodiment, the symbol image generation module 202, the original symbol definition module 204, the dynamic symbol definition module 206, and the challenge symbol view generation module 208 are all included within a single device. In another embodiment, the symbol image generation module 202, the original symbol definition module 204, the dynamic symbol definition module 206, and the challenge symbol view generation module 208 are distributed over one or more communicatively coupled devices.

Symbol data representative of a symbol is received at the symbol image generation module 202. In one embodiment, the symbol data is received at the system 100 via an input device 106. In one embodiment, the symbol data is received at the system 100 via the network interface 110. In one embodiment, a symbol consists of one or more alphanumeric characters. In one embodiment, the symbol data consists of an ASCII representation of the one or more alphanumeric characters. In one embodiment, the symbol data consists of an image representation of the one or more alphanumeric characters.

In one embodiment, the symbol consists of one or more non-alphanumeric images, such as for example, icons, directional arrows, descriptive directions, descriptive problems, and/or company logos. Examples of icons include, but are not limited to, a happy face, star, stop sign, traffic light, speaker, eye, magnifying glass, lightning bolt, heart, checkmark, no (red circle with a line through it). Examples of directional arrows include, but are not limited to, sequence of left, right, up, down, circular, back and forth, button clicks, and compass point directions. An example of descriptive direction is "click on plaid square." And example of a descriptive problem is "what is two plus two?"

The symbol is represented using symbol data representations in, such as for example, including, but not limited to, BMP (Windows Bitmap®), GIF

(Compuserve Graphical Image Format), PNG (Portable Network graphics), SVG (Scalable Vector Graphics), VRML (Virtual Reality Markup Language),WMF (Windows MetaFile®), AVI (Audio Visual Interleave), MOV (Quicktime Movie), SWF (Shockwave Flash), DirectX, OpenGL, Java, Windows®, MacOS®, Linux, PDF (portable document format), JPEG (Joint Photographic Experts Group), or MPEG (Moving Picture Experts Group).

The symbol image generation module 202 generates a symbol image of the symbol associated with the received symbol data. In one embodiment, the symbol image is recognizable to both a human user and an automated agent. Referring to FIG. 3, an example of a symbol image 300 having a block font format generated by one embodiment of a symbol image generation module 202 for a symbol "1" in accordance with the principles of the present invention is shown. Referring to FIG 4, an example of a symbol image 400 having a three dimensional block font format generated by one embodiment of a symbol image generation module 202 for a symbol "1" in accordance with the principles of the present invention is shown. It should be noted that while a number of examples of different formats for symbol images have been described, alternative formats for symbol images are also considered to be within the scope of the invention. In one embodiment, the symbol image generation module 202 provides a user with the option of selecting one of a number of different available formats for generated a symbol image.

In one embodiment, the symbol image is a distorted symbol image where the distorted symbol image poses a symbol identification challenge for an automated agent. Referring to FIG 5, an example of a distorted symbol image 500 generated by one embodiment of a symbol image generation module 202 for a symbol "1" in accordance with the principles of the present invention is shown. Referring to FIG 6, an example of another distorted symbol image 600 generated by one embodiment of a symbol image generation module 202 for a symbol "1" in accordance with the principles of the present invention is shown. In one embodiment, the distorted symbol image is a warped representation of the symbol. In one embodiment, the distorted symbol image includes one or more randomly generated arcs strategically positioned with respect to the

symbol. In one embodiment, the distorted symbol image includes the symbol with background noise, such as for example including, but not limited to, lines, grids, circles, and dots. In one embodiment, the distorted symbol image is a handwritten representation of the symbol. In one embodiment, the symbol image is a representation of the symbol created using variable stroke widths. In one embodiment, the distorted symbol image is a representation of the symbol including randomly stretched and/or compressed sections of the symbol. It should be noted that while a number of different types distorted symbol images have been described for representing a symbol, alternative types of distorted symbol images are also considered to be within the scope of the invention. In one embodiment, the symbol image generation module 202 provides a user with the option of selecting one of a number of different available distorted symbol images for generating a symbol image.

Referring back to FIG. 2, the symbol image generated by the symbol image generation module 202 is received at the original symbol definition module 204. In one embodiment, a three dimensional symbol coordinate system is defined by x, y, and z axes. The original symbol definition module 204 defines the received symbol image in the x-y plane of the symbol coordinate system. The symbol image as defined by the original symbol definition module 204 in the symbol coordinate system is the original version of the symbol. Referring to FIG. 7, an example of a rendering of an original version of the symbol 700 associated with the symbol image 300 of FIG. 3 in the symbol coordinate system 702 in accordance with the principles of the present invention is shown. Referring to FIG. 8, an example of a table 800 including a plurality of vectors that have been generated by one embodiment of the original symbol definition module 204 to define the original version of the symbol associated with the symbol image 300 of FIG. 3 in the symbol coordinate system 702 in accordance with the principles of the present invention is shown. It should be noted that while one type of symbol coordinate system has been described for defining an original version of a symbol associated with a symbol image, other types of symbol coordinate systems and/or alternative symbol

definition mechanisms may be used to define an original version of a symbol without departing from the spirit of the invention.

Referring back to FIG. 2, the dynamic symbol definition module 206 receives the original version of the symbol as an input and incorporates a noise component into the original version of the symbol thereby defining a dynamic version of the symbol. The dynamic symbol definition module 206 selects a plurality of points from the original version of the symbol defined in the x-y plane of the symbol coordinate system and adds a z-axis noise offset to each of the plurality of selected points thereby generating a dynamic version of the symbol. In one embodiment, the dynamic symbol definition module 206 selects the endpoints of each of the plurality of vectors that define the original version of the symbol as the selected plurality of points. In one embodiment, in cases, where a single point is shared as an endpoint by a first vector and a second vector, a first z-axis noise offset is added to the shared point as a component of the first vector and a second z-axis noise offset is added to the shared point as a component of the second vector. In one embodiment, the dynamic symbol definition module 206 randomly selects a plurality of points from the original version of the symbol. In one embodiment, the dynamic symbol definition module 206 selects a pre-defined number of points from the original version of the symbol as the plurality of points. In one embodiment, each of the z-axis noise offsets that are added to each of the selected plurality of points are randomly generated z-axis noise offset values. In one embodiment, each of the individual z-axis noise offset values is a different z-axis noise offset value. In one embodiment, the z-axis noise offset values are selected from a pre-defined range of z-axis noise offset values.

Referring to FIG. 9, an example of a table 900 including a plurality of vectors generated by one embodiment of the dynamic symbol definition module 206 to define a dynamic version of the symbol associated with the original version of the symbol of FIG. 8 in the symbol coordinate system 702 in accordance with the principles of the present invention is shown. The dynamic symbol definition module 206 selected the endpoints of each of the plurality of vectors used to define the original version of the symbol as the selected plurality

of points. The dynamic symbol definition module 206 added randomly generated z-axis noise offsets to each of the plurality of endpoints of the vectors defining the original version of the symbol to generate the dynamic version of the symbol. It should be noted that while one type of symbol coordinate system has been described for defining a dynamic version of a symbol associated with a symbol image, other types of symbol coordinate systems and/or alternative symbol definition mechanisms may be used to define a dynamic version of a symbol without departing from the spirit of the invention.

Referring back to FIG. 2, the challenge symbol view generation module 208 receives the dynamic version of the symbol as an input and generates a challenge symbol view that poses a symbol identification challenge for an automated agent. A viewing plane is generally parallel to the x-y plane of an initial orientation position of the symbol coordinate system. A symbol view is an orthogonal projection of a representation of the dynamic version of the symbol in the symbol coordinate system onto the viewing plane. The symbol view generally varies as a function of the orientation of the symbol coordinate system with respect to the viewing plane. The orthogonal projection of the representation of the dynamic version of the symbol in the symbol coordinate system, with the symbol coordinate system being in the initial orientation position, projects the original symbol view onto the viewing plane. The original symbol view is substantially similar to the symbol image generated by the symbol image generation module 202.

In one embodiment, the challenge symbol view generation module 208 rotates the symbol coordinate system, containing the dynamic rendering of the symbol, from an initial orientation position through a rotation angle α about the x-axis and a rotation angle β about the y-axis. The symbol view generated as a product of the orthogonal projection of the dynamic rendering of the symbol in the rotated symbol coordinate system onto the viewing plane is a challenge symbol view. A challenge symbol view of the dynamic rendering of the symbol is different from the symbol image generated by the symbol image generation module 202.

Different challenge symbol views can be generated by varying individual values of the rotation angle α and/or the rotation angle β. In one embodiment, the value of the rotation angle α and the value of the rotation angle β are randomly generated values. In one embodiment, the challenge symbol views of the dynamic version of the symbol become increasingly similar to the original symbol view as the values of the rotation angle α and the rotation angle β approach 0°.

In one embodiment, the challenge symbol view generation module 208 rotates the symbol coordinate system, containing a rendering of the dynamic version of the symbol, from an initial orientation position through a rotation angle α about the x-axis. The symbol view generated as a product of the orthogonal projection of the rendering of the dynamic version of the symbol in the rotated symbol coordinate system onto the viewing plane is one of many possible challenge symbol views. A challenge symbol view of the dynamic version of the symbol is different from the symbol image generated by the symbol image generation module 202. Different challenge symbol views can be generated by varying values of the rotation angle α. In one embodiment, the value of the rotation angle α is a randomly generated value.

In one embodiment, the challenge symbol view generation module 208 rotates the symbol coordinate system, containing a rendering of the dynamic version of the symbol, from an initial orientation position through a rotation angle β about the y-axis. The symbol view generated as a product of the orthogonal projection of the rendering of the dynamic version of the symbol in the rotated symbol coordinate system onto the viewing plane is a challenge symbol view. A challenge symbol view of the dynamic version of the symbol is different from the symbol image generated by the symbol image generation module 202. Different challenge symbol views can be generated by varying values of the rotation angle β. In one embodiment, the value of the rotation angle β is a randomly generated value.

In one embodiment, the challenge symbol view generation module 208 selects a particular challenge symbol view of the dynamic version of the symbol for storage in the memory 104 at the system 100. The selected challenge

symbol view is a challenge symbol view that is typically substantially different from the original symbol view. The symbol received at the challenge symbol generator 114 is stored as the selected challenge symbol view at the system 100. The selected challenge symbol view of the symbol that is stored at the system 100 poses a symbol identification challenge to an automated agent that may gain access to the system 100.

In one embodiment, the original version of the symbol is discarded. In one embodiment, the symbol data associated with the symbol is discarded. In one embodiment, the symbol image associated with the symbol is discarded. In one embodiment, the original version of the symbol is stored in a storage device that is generally inaccessible to an automated agent. In one embodiment, the symbol data associated with the symbol is stored in a storage device that is generally inaccessible to an automated agent. In one embodiment, the symbol image associated with the symbol is stored in a storage device that is generally inaccessible to an automated agent.

Referring to FIG. 10(a)-(g) illustrative examples of a series of different views of a rendering of the original version of the symbol defined in FIG. 8 in a viewing plane as the symbol coordinate system is rotated about the y-axis in accordance with the principles of the invention is shown. Referring to FIG. 11(a)-(g) illustrative examples of a series of different symbol views of a rendering of the dynamic version of the symbol defined in FIG.10 in a viewing plane as the symbol coordinate system is rotated about the y-axis in accordance with the principles of the present invention are shown. The series of different views of the original version of the symbol in FIG. 10 (a)-(g) are presented to provide a basis for comparing the different views of the original version of the symbol with parallel symbol views of the dynamic representation of the symbol shown in FIG. 11(a)-(g).

Each of the different views of the original version of the symbol in FIG 10(a)-(g) and the different symbol views of the dynamic version of the symbol FIG. 11(a)-(g) is associated with different values of the rotation angle β while the rotation angle α is maintained at a value of 0°. The symbol coordinate system 702 is displayed as a part of each of the different views to illustrate the

orientation of the symbol coordinate system 702 with respect to the viewing plane. The symbol coordinate system 702 is not displayed in the actual rendering of the symbol views of the dynamic version of the symbol in the viewing plane.

FIG. 10(a) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 0°. FIG. 11(a) depicts the original symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 0°. When the value of the rotation angle α is 0° and the value of the rotation angle β is 0°, the symbol coordinate system 702 is in the initial orientation position with respect to the viewing plane. Note that the symbol view of the dynamic version of the symbol when the symbol is in the initial orientation position in FIG. 11(a) is similar to the original version of the symbol shown in FIG. 10(a).

FIG. 10(b) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 22.5°. FIG. 11(b) depicts a challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 22.5°.

FIG. 10(c) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 30°. FIG. 11(c) depicts another comparable challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 30°.

FIG. 10(d) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 45°. FIG. 11(d) depicts another challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 45°.

FIG. 10(e) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 60°.

FIG. 11(e) depicts another challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 60°.

FIG. 10(f) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 67.5°. FIG. 11(f) depicts another challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 67.5°.

FIG. 10(g) depicts a view of the original version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 90°. FIG. 11(g) depicts another challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 90°.

Note that the views of the rotated original version of the symbol in FIG. 10(b)-(f) are relatively more identifiable by an automated agent as the associated symbol, than the challenge symbol views of the rotated dynamic version of the symbol illustrated in FIG. 11(b)-(g). In other words, the challenge symbol views of the symbol illustrated in FIG. 11(b)-(g) pose a symbol identification challenge for an automated agent.

In one embodiment, challenge symbol generator 114 generates a dynamic version of a received symbol that includes a false symbol image as one of the possible challenge symbol views. The challenge symbol generator 114 generates a dynamic version of the symbol received for processing. In one embodiment, the dynamic version of the symbol includes a dynamic version of an original symbol and a dynamic version of a false symbol, where the original symbol is the symbol that is received by the challenge symbol generator 114 for processing.

Symbol data associated with a symbol is received at the symbol image generation module 202. The symbol image generation module 202 generates a symbol image of the symbol. The original symbol definition module 204 defines an original version of the symbol associated with the received symbol image in the x-y plane of a three dimensional symbol coordinate system. The dynamic

symbol definition module 206 selects a plurality of points from the original version of the symbol and adds z-axis noise offsets to each of the selected plurality of points thereby generating a dynamic version of the original symbol.

In one embodiment, the dynamic symbol definition module 206 generates a value for a false symbol rotation angle θ_{FS} about the x-axis of the symbol coordinate system and a value for a false symbol rotation angle λ_{FS} about the y-axis of the symbol coordinate system. In one embodiment, the dynamic symbol definition module 206 generates a value for a false symbol rotation angle θ_{FS} about the x-axis of the symbol coordinate system. In one embodiment, the dynamic symbol definition module 206 generates a value for a false symbol rotation angle λ_{FS} about the y-axis of the symbol coordinate system. In one embodiment, the values of one or both of the false symbol rotation angles θ_{FS} and λ_{FS} are randomly generated values. In another embodiment, the values of one or both of the false symbol rotation angles θ_{FS} and λ_{FS} are pre-defined values. When the symbol coordinate system is rotated from the initial orientation position through the false symbol rotation angle(s), the symbol coordinate system is positioned in a false symbol view orientation.

A false symbol image is received at the dynamic symbol definition module 206. In one embodiment, the false symbol image is generated by the dynamic symbol definition module 206. In one embodiment, a false symbol image is selected from a plurality of false symbol images available for selection by a user. In one embodiment, the plurality of pre-defined false symbol images is stored at the system 100 and the dynamic symbol definition module 206 randomly selects one of the pre-defined false symbol images. In one embodiment, the false symbol image is provided by a user via an input device 106.

The dynamic symbol definition module 206 defines the false symbol image in a false symbol definition plane of the symbol coordinate system, such that the defined false symbol image is visible in the viewing plane when a rendering of the dynamic version of the symbol within the symbol coordinate system is projected onto a viewing plane with the symbol coordinate system being positioned in the false symbol view orientation. More specifically, the

dynamic symbol definition module 206 rotates the symbol coordinate system about the false symbol rotation angle(s) and defines a plane of the rotated symbol coordinate system that is generally parallel the viewing plane as the false symbol definition plane. The dynamic symbol definition module 206 defines the false symbol image in the false symbol definition plane of the symbol coordinate system.

The dynamic symbol definition module 206 adds a noise component to the false symbol image defined in the false symbol definition plane of the symbol coordinate system thereby defining the dynamic version of the false symbol. In one embodiment, the dynamic symbol definition module 206 selects a plurality of points from the false symbol defined in the false symbol definition plane. In one embodiment, the dynamic symbol definition module 206 selects the endpoints of the vectors that define the false symbol image in the false symbol definition plane as the selected plurality of points. The dynamic symbol definition module 206 adds a noise component to each of the selected plurality of points. In one embodiment, the noise components consist of noise offsets that are added to each of the selected plurality of points in an axis that is generally perpendicular to the false symbol definition plane. In one embodiment, each of the noise offset values is a randomly generated value.

In one embodiment, the dynamic symbol definition module 206 defines the false symbol as having a presentation format that is different from the defined presentation format of the original symbol. In one embodiment, the presentation format for a depiction of the original symbol in the viewing plane is a first color and the presentation format for a depiction of the false symbol in the viewing plane is a second color. In one embodiment, the presentation format for a depiction of the original symbol in the viewing plane is a first font style and the presentation format for a depiction of the false symbol in the viewing plane is a second font style. In one embodiment, the presentation format for a depiction of the original symbol in the viewing plane is using lines having a first thickness and the presentation format for a depiction of the false symbol in the viewing plane is using lines having a second thickness. It should be noted that while a number of different presentation formats for the original symbol and the false

symbol having been described, alternative presentation formats that enable a human user to distinguish one of the original and false symbol from the other of the original and false symbol are also considered to be within the scope of the invention.

In one embodiment, the dynamic symbol definition module 206 generates specifications that specify the specific presentation format used to present the original symbol in the viewing plane so that a human user is able to identify the original symbol. In one embodiment, the dynamic symbol definition module 206 generates specifications that specify the specific presentation format used to present the false symbol in the viewing plane so that a human user is able to identify the original symbol. In one embodiment, the dynamic symbol definition module 206 generates specifications that specify the specific presentation formats used to present each of the original symbol in and the false symbol in the viewing plane so that a human user is able to identify the original symbol.

In one embodiment, if the original symbol is associated with a first category of symbols, the false symbol is selected from a second category of symbols. For example, if the original symbol consists of a number, the selected false symbol may be a letter. The dynamic symbol definition module 206 generates specifications that specify the category associated with the original symbol so that a human user is able to distinguish the original symbol from the false symbol.

The dynamic version of the symbol includes both the dynamic version of the original symbol and the dynamic version of the false symbol. When a dynamic version of the symbol is rendered in the symbol coordinate system and the symbol coordinate system is oriented in an initial orientation position, an orthogonal projection of a rendering of the dynamic version of the symbol in the symbol coordinate system generates a view of the original symbol and a noisy view of the false symbol image in the viewing plane. When a dynamic version of the symbol is rendered in the symbol coordinate system and the symbol coordinate system in oriented in the false symbol view orientation, an orthogonal projection of a rendering of the dynamic version of the symbol in the symbol

coordinate system generates a view of the false symbol and a noisy view of the original symbol.

As described previously, the challenge symbol view generation module 208 receives the dynamic version of the symbol as an input and generates a challenge symbol view that poses a symbol identification challenge for an automated agent. In one embodiment, the challenge symbol view generation module 208 rotates the symbol coordinate system, containing the dynamic rendering of the symbol, from an initial orientation position through one or both of a rotation angle α about the x-axis and a rotation angle β about the y-axis. The challenge symbol view generated as a product of the orthogonal projection of the dynamic rendering of the symbol in the rotated symbol coordinate system onto the viewing plane is a challenge symbol view. A challenge symbol view of the dynamic rendering of the symbol is different from the symbol image generated by the symbol image generation module 202. In one embodiment, the challenge symbol view generation module 208 includes the original symbol and false symbol specification as a component of a challenge symbol view package. In one embodiment, the challenge symbol view package is stored at the system 100.

The following illustrative example is used to illustrate the manner in which the challenge symbol generator 114 generates a dynamic version of a symbol including a dynamic version of an original symbol and a dynamic version of a false symbol in accordance with the principles of the invention. In this illustrative example, the symbol image generation module 202 generated the symbol image 300 shown in FIG. 3 to represent the symbol "1". The original symbol definition module 204 generated an original version of the symbol of the received symbol image 300 as previously described with reference to FIG. 7 and FIG. 8. The dynamic symbol definition module 206 added noise components in the form of z-axis noise offsets to the original version of the symbol as previously described with reference to FIG. 9.

In this example, the dynamic symbol definition module 206 generated a false symbol image for the false symbol "2", a value of 0° for a false symbol rotation angle θ_{FS} and a value of 90° for a false symbol rotation angle λ_{FS}. The

dynamic symbol definition module 206 rotated the symbol coordinate system about the generated false symbol rotation angles θ_{FS} and λ_{FS} and defined a plane in the symbol coordinate system that is generally parallel to the viewing plane as the false symbol definition plane. In this example, the false symbol definition plane is defined by a x_{FS}-axis and a y_{FS}-axis. The dynamic symbol definition module 206 defined the false symbol image in the false symbol definition plane using vectors defined by x_{FS}-y_{FS} coordinates in the false symbol definition plane. Referring to FIG. 12 an example table including a plurality of vectors generated by one embodiment of the dynamic symbol generation module 206 to define the false symbol image in the false symbol definition plane in accordance with the principles of the present invention is shown.

Referring to FIG. 13 an example of an orthogonal projection of a rendering of the dynamic version of the original symbol 1300 and of a rendering of the false symbol 1302 in the false symbol definition plane, as defined in the table of FIG. 12, in the symbol coordinate system onto a viewing plane in accordance with the principles of the present invention is shown. The symbol coordinate system is oriented in the false symbol view orientation in FIG. 13. In this example, the dynamic symbol definition module 206 has used a presentation format that depicts the original symbol in the viewing plane using lines having a first thickness and depicts the false symbol in the viewing plane using lines having a second thickness, where the first thickness is relatively thicker than the second thickness.

The dynamic symbol definition module 206 selected the endpoints of each of the plurality of vectors that define the false symbol image 1302 in the false symbol definition plane. Noise offset were added to the endpoints of each of the plurality of vectors in an axis that is generally perpendicular to the false symbol definition plane. For the purposes of this illustrative example, the axis generally perpendicular to the false symbol image coordinate system will be referred to as the z_{FS} axis. In other words the dynamic version of the false symbol is defined in a three dimensional false symbol coordinate system defined by the x_{FS}, y_{FS}, and z_{FS} axes. As mentioned previously, the x_{FS}-y_{FS} plane is generally parallel to the viewing plane. Referring to FIG. 14 an example

table including the plurality of vectors generated by one embodiment of the dynamic symbol definition module 206 to define the dynamic version of the false symbol image in accordance with the principles of the present invention is shown.

Referring to FIG. 15 (a)-(e) illustrative examples of a series of different symbol views of a rendering of the dynamic version of the symbol as defined by FIG. 9 and FIG. 14 in a viewing plane as the symbol coordinate system is rotated about the y-axis in accordance with the principles of the present invention are shown. The dynamic version of the symbol includes the dynamic version of the original symbol and the dynamic version of the false symbol. Each of the different views of the dynamic version of the symbol in FIG. 15(a)-(e) is associated with different values of the rotation angle β while the rotation angle α is maintained at a value of 0°. The symbol coordinate system is displayed as a part of each of the different views to illustrate the orientation of the symbol coordinate system with respect to the viewing plane. The symbol coordinate system is not displayed in the actual rendering of the symbol views of the dynamic version of the symbol in the viewing plane.

FIG. 15 (a) depicts the original symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 0°. The symbol coordinate system is in the initial orientation position when the value of the rotation angle α is 0° and the value of the rotation angle β is 0°. The original symbol view of the dynamic version of the symbol includes a view of the original version of the symbol superimposed on a noisy view of the dynamic version of the false symbol.

FIG. 15 (b) depicts a challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 22.5°. The challenge view of the dynamic version of the symbol includes a noisy view of the original version of the symbol superimposed on a noisy view of the dynamic version of the false symbol.

FIG. 15 (c) depicts a challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 45°. The challenge view of the dynamic version of the symbol

includes a noisy view of the original version of the symbol superimposed on a noisy view of the dynamic version of the false symbol.

FIG. 15 (d) depicts a challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 67.5°. The challenge view of the dynamic version of the symbol includes a noisy view of the original version of the symbol superimposed on a noisy view of the dynamic version of the false symbol.

FIG. 15 (d) depicts a challenge symbol view of the dynamic version of the symbol where the value of the rotation angle α is 0° and the value of the rotation angle β is 90°. The symbol coordinate system is in the false symbol view orientation. The challenge view of the dynamic version of the symbol includes a noisy view of the original version of the symbol superimposed on a false symbol view of the dynamic version of the false symbol. It should be noted that while an example illustrating a manner of defining a dynamic version of a symbol including a dynamic version of an original symbol and a dynamic version of a false symbol a component has been described, alternative techniques for defining a dynamic version of a symbol including a dynamic version of an original symbol and a dynamic version of a false symbol are also considered to be within the scope of the invention. Furthermore, defining the false symbol before the original symbol is also considered to be within the scope of the invention.

When a user at the system 100 wishes to access a symbol stored in the system 100 by the challenge symbol generator 114, the user retrieves the stored challenge symbol view associated with the symbol from the memory 104. The retrieved challenge symbol view is displayed in a viewing plane. In one embodiment, the boundaries of the display screen at the system 100 define the viewing plane. In one embodiment, a selected area of the display screen is defined as the viewing plane. The user is provided with a view selection field for selecting different symbol views of the dynamic version of the symbol associated with the retrieved challenge symbol view. In one embodiment, the view selection field is defined by the boundaries of the viewing plane. In one embodiment, the view selection field is defined as a selected area of the display

screen. In one embodiment, the view selection field is defined as a selected area of the viewing plane. In one embodiment, the view selection field is a component of the view selection mechanism.

The orientation of the symbol coordinate system with respect to the viewing plane associated with the retrieved challenge symbol view is designated the first orientation position. A user can selectively rotate the symbol coordinate system containing a rendering of the dynamic version of the symbol associated with the retrieved challenge symbol view from the first orientation position through a rotation angle α' about the x-axis and a rotation angle β' about the y-axis thereby generating the symbol view associated with the new orientation of the symbol coordinate system with respect to the viewing plane. In other words, rotating the symbol coordinate system about the x-axis and/or the y-axis yields different symbol views of the dynamic version of the symbol. In one embodiment, the symbol coordinate system is rotated a rotation angle α' about the x-axis and/or a rotation angle β' about the y-axis responsive to the movement of a cursor in the view selection field. In one embodiment a user-interaction script is provided at the system 100. The user-interaction script is a component of the view selection mechanism. The user-interaction script generates rotated views of a dynamic version of the symbol in the symbol coordinate system in the viewing plane responsive to input received via an input device 106. It should be noted that alternative view selection mechanisms for generating rotated views of the dynamic version of the symbol in a viewing plane are also considered to be within the scope of the invention.

In the case where the challenge symbol view generation module 208 generated the retrieved challenge symbol view by rotating the symbol coordinate system a rotation angle α_1 about the x-axis and a rotation angle β_1 about the y-axis from the initial orientation of the symbol coordinate system, the user will have to rotate the symbol coordinate system containing the retrieved challenge symbol view by a rotation angle $-\alpha_1$ about the x-axis and a rotation angle $-\beta_1$ about the y-axis from the first orientation of the symbol coordinate system. In one embodiment, the challenge symbol views of the dynamic version of the symbol become increasingly similar to the original symbol view as

the value of the rotation angle α' approaches the value of $-\alpha_1$ and the value of the rotation angle β' approaches the value of $-\beta_1$.

A human user will typically interact with or manipulate views of the dynamic version of the symbol through user input commands provided via an input device 106. The input data rotation commands received via the input device 106 are handled by an interface that translates received input data rotation commands and updates the symbol views in the viewing plane accordingly. In one embodiment, a human user will typically rotate the symbol coordinate system containing a rendering of the dynamic version of the symbol via a trial and error process until the challenge symbol views begin to approach the form of a symbol. The human user will then typically continue to rotate the symbol coordinate system in the appropriate direction to generate challenge symbol views that become increasingly similar to a symbol image until the original symbol view is displayed in the viewing plane.

In many cases, an automated agent typically approaches the analysis of symbol views of a dynamic version of the symbol at different rotation angles systematically. The automated agent also typically performs the analysis of the different symbol views using optical character recognition (OCR) technologies. OCR based analysis can often be a time consuming process. The rotation of the symbol coordinate system including a rendering of a dynamic version of a symbol may, in some cases, have the capacity to generate as many as 100,000 possible challenge symbol views on a viewing plane that are different from the original symbol view thereby creating a symbol identification challenge for an automated agent.

Referring to FIG. 16, a flowchart of one embodiment of a method 1600 of generating a representation of a symbol that presents a challenge for an automated agent in accordance with the principles of the present invention is shown. A symbol is provided at a first system at step 1602 and a first version of the symbol is defined at the first system at step 1604. At step 1606, a second version of the symbol is defined at the first system by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second

selectable view options, respectively. The first view is substantially similar to the first version of the symbol and is different from the second view. It should be noted that while the steps in the method 1600 have been described in a particular order, performing one or more of the steps in a different order are also considered to be within the scope of the invention. In one embodiment, a system 100 includes the means to perform the steps 1602-1606 described above. It should be noted that a system that performs one or more of the steps 1602-1606 in a different order are also considered to be within the scope of the invention.

In one embodiment, a machine readable medium stores a machine executable program for generating a representation of a symbol that presents an identification challenge for an automated agent. The machine readable medium includes machine readable code for providing a symbol at a first system, machine readable code for defining a first version of the symbol at the first system, and machine readable code for defining a second version of the symbol at the first system by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively, the first view being substantially similar to the first version of the symbol and different from the second view.

Referring to FIG. 17 a flowchart of another embodiment of a method 1700 of generating a challenge symbol view of a symbol that presents a symbol identification challenge for an automated agent in accordance with the principles of the present invention is shown. At step 1702, symbol data associated with a symbol is received at the challenge symbol generator 114. In one embodiment, the symbol data is received via an input device 106. In one embodiment, the symbol data is received via the network interface 110.

At step 1704, the symbol image generation module 202 generates a symbol image of the symbol associated with the received symbol data. In one embodiment, the symbol image is recognizable to both a human user and to an automated agent. In one embodiment, the symbol image is a distorted symbol image that is recognizable to a human user while posing a symbol identification

challenge to an automated agent. At step 1706 the original symbol definition module 204 defines the symbol image in the x-y plane of a three dimensional symbol coordinate system thereby generating the original version of the symbol.

At step 1708, the dynamic symbol generation module 206 selects a plurality of points from the original version of the symbol. In one embodiment, the dynamic symbol generation module 206 selects the endpoints of the vectors defining the original version of the symbol as the plurality of points. In one embodiment, the dynamic symbol generation module 206 randomly selects the plurality of points. At step 1710, the dynamic symbol generation module 206 adds a z-axis noise offset to each of the selected plurality of points thereby generating the dynamic version of the symbol. In one embodiment, the values of each of the individual z-axis noise offsets added to each of the individual plurality of points are randomly generated values. The challenge symbol view generation module 208 rotates the symbol coordinate system including the rendering of the dynamic version of the symbol a rotation angle α about the x-axis at step 1712 and a rotation angle β about the y-axis at step 1714. In one embodiment, the value of the rotation angle α and the value of the rotation angle β are randomly generated values. At step 1716 the rendering of the dynamic version of the symbol in the rotated symbol coordinate system is orthogonally projected into a viewing plane thereby generating a challenge symbol view. In one embodiment, a challenge symbol view that is substantially different from the symbol image is selected for storage at the system 100. The symbol data and the original symbol view are then discarded so that they are not stored in the system 100. The stored challenge symbol view poses a symbol identification challenge for an automated agent that may gain access to the system 100. To gain access to the symbol, a user retrieves the challenge symbol view and rotates the symbol coordinate system containing the dynamic version of the symbol associated with the challenge symbol view about the x-axis and the y-axis until the original version of the symbol is revealed to the user. It should be noted that while the steps in the method 1700 have been described in a particular order, performing one or more of the steps in a different order are also considered to be within the scope of the invention. Furthermore,

performing a subset of the steps described in the method 1700 or performing additional steps beyond those described in the method 1700 are also considered to be within the scope of the invention.

Referring to FIG. 18 a block diagram of a system 100' that may be used to implement one embodiment of generating a representation of a symbol that presents an identification challenge for an automated agent in accordance with the principles of the present invention is shown. The system 100' is communicatively coupled to one or more clients 1800. In one embodiment the system 100' is a server system 100'. In one embodiment, the server 100' is a web server system 100'. The system 100' is communicatively coupled to one or more client systems 1800.

In one embodiment, the system 100 generally includes a processing unit 102' communicatively coupled to a memory 104', one or more input devices 106', one or more output devices 106', and a network interface 110'. In one embodiment, the network interface 110' is an Internet interface port. In one embodiment, the memory 104 generally includes an operating system 112', a challenge symbol generator 114' and a symbol database 118. The processing unit 102' generally retrieves and executes machine readable instructions or software programs that are stored in the memory 104'.

The challenge symbol generator 114 receives symbol data representative of a symbol, generates a dynamic version of the symbol associated with the received symbol data, and generates a challenge symbol view of the symbol as described above. The symbol data representative of a symbol is received at the symbol image generation module 202 of the challenge symbol generator 114. In one embodiment, the symbol data is received at the system 100' via an input device 106'. In one embodiment, the symbol data is received at the system 100 via the network interface 110'. In one embodiment, a plurality of symbols is stored in the symbol database 118. In one embodiment, the symbol data associated with each of the plurality of symbols is stored in the symbol database 118.

In one embodiment, a challenge symbol view of a symbol is generated at the system 100' responsive to a request for transmission of a symbol from the

system 100' to a client system 1800. The challenge symbol view of the dynamic representation of the symbol associated with the symbol is generated at the system 100' using the challenge symbol generator 114. In one embodiment the challenge symbol view is transmitted from the system 100' to the client system 1800. In one embodiment, a view selection mechanism is transmitted from the system 100' to the client system 1800. In one embodiment, a copy of the dynamic version of the symbol is stored in the symbol database 118. In one embodiment, a copy of the challenge symbol view transmitted from the system 100' to the client 180 is stored in the symbol database. In one embodiment, where the symbol data associated with the transmitted symbol is received from a source external to the system 100', a copy of the symbol is stored in the symbol database 118. In one embodiment, symbol identification data associated with the symbol is stored in the symbol database 118.

The challenge symbol view received at the client system 1800 is displayed in a viewing plane. In one embodiment, the boundaries of a client system display screen define the viewing plane. In one embodiment, a selected area of the client system display screen is defined as the viewing plane. The user is provided with a view selection field at the client system 1800 for selecting different symbol views of the dynamic version of the symbol associated with the received challenge symbol view. In one embodiment, the view selection field is defined by the boundaries of the viewing plane. In one embodiment, the view selection field is defined as a selected area of the client system display screen. In one embodiment, the view selection field is defined as a selected area of the viewing plane. In one embodiment, the view selection field is a component of the view selection mechanism.

The orientation of the symbol coordinate system with respect to the viewing plane associated with the received challenge symbol view is designated the first orientation position. A user can selectively rotate the symbol coordinate system containing the rendering of the dynamic version of the symbol associated with the received challenge symbol view from the first orientation position through a rotation angle α' about the x-axis and a rotation angle β' about the y-axis thereby generating the symbol view associated with the new

orientation of the symbol coordinate system with respect to the viewing plane. In other words, rotating the symbol coordinate system about the x-axis and/or the y-axis yields different symbol views of the dynamic version of the symbol.

In one embodiment, the symbol coordinate system is rotated a rotation angle α' about the x-axis and/or a rotation angle β' about the y-axis responsive to the movement of a cursor in the view selection field. In one embodiment a user-interaction script is provided at the client system 1800. The user-interaction script is a component of the view selection mechanism. The user-interaction script generates rotated views of a dynamic version of the symbol in the symbol coordinate system in the viewing plane responsive to input received via a client input device 106'. It should be noted that alternative view selection mechanisms for generating rotated views of the dynamic version of the symbol in a viewing plane are also considered to be within the scope of the invention.

In the case where the challenge symbol generator 114 generated the challenge symbol view by rotating the symbol coordinate system a rotation angle α_1 about the x-axis and a rotation angle β_1 about the y-axis from the initial orientation of the symbol coordinate system, the user will have to rotate the symbol coordinate system containing the received challenge symbol view by a rotation angle $-\alpha_1$ about the x-axis and a rotation angle $-\beta_1$ about the y-axis from the first orientation of the symbol coordinate system. In one embodiment, the challenge symbol views of the dynamic version of the symbol become increasingly similar to the original symbol view as the value of the rotation angle α' approaches the value of $-\alpha_1$ and the value of the rotation angle β' approaches the value of $-\beta_1$.

A human user will typically interact with or manipulate views of the dynamic version of the symbol through user input commands provided via a client system input device. The input data rotation commands received via the client system input device is handled by an interface that translates received input data rotation commands and updates the symbol views in the viewing plane accordingly. In one embodiment, a human user will typically rotate the symbol coordinate system containing a rendering of the dynamic version of the symbol via a trial and error process until the challenge symbol views begin to

approach the form of a symbol. The human user will then typically continue to rotate the symbol coordinate system in the appropriate direction to generate challenge symbol views that become increasingly similar to a symbol image until the original symbol view is displayed in the viewing plane.

In one embodiment, once a user at the client system 1800 identifies the symbol associated with the dynamic version of the symbol, the user transmits symbol identification data associated with the identified symbol from the client system 1800 to the system 100'. Once the system 100' received the symbol identification data associated with the symbol originally transmitted from the system 100' that that particular client system 1800, the processing unit 102' retrieves a copy of the symbol identification data associated with the transmitted symbol from the symbol database 118. The processing unit 102' compares the symbol identification data received from the client 1800 with the symbol identification data retrieved from the symbol database 118. In one embodiment, the system 100' makes a determination that the user at the client system 1800 is a human user if the symbol identification data received at the system 100' correctly identifies the symbol associated with the dynamic version of the symbol transmitted from the system 100' to that client system 1800.

It should be noted that while systems implemented using software or firmware executed by hardware have been described above, those having ordinary skill in the art will readily recognize that the disclosed systems could be implemented exclusively in hardware through the use of one or more custom circuits, such as for example, application-specific integrated circuits (ASICs) or any other suitable combination of hardware and/or software.

While the embodiments of the invention disclosed herein are presently considered to be preferred, various changes, and modifications can be made without departing from the spirit and scope of the invention. The scope of the invention is indicated in the appended claims, and all changes that come within the meaning and range of equivalents are intended to be embraced therein.

In the claims:

1. A challenge symbol generator (114) for generating a representation of a symbol that poses an identification challenge for an automated agent comprising:

an original symbol definition module (204) operable to define a first version of a symbol at a first system (100); and

a dynamic symbol definition module (206) operable to define a second version of the symbol at the first system (100) by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively, the first view being substantially similar to the first version of the symbol and different from the second view.

2. The challenge symbol generator (114) of claim 1,

wherein the original symbol definition module (204) is operable to define the first version of the symbol in a three dimensional coordinate system defined by first, second and third axes, the first version of the symbol being defined in a first plane defined by the first and second axes, the first plane being generally parallel to the viewing plane, and

wherein the dynamic symbol definition module (206) is operable to select first and second points of the first version of the symbol and add first and second noise offsets to the selected first and second points, respectively, thereby defining the second version of the symbol.

3. The challenge symbol generator (114) of claim 2, further comprising a challenge symbol view generation module (208) operable to rotate the three dimensional coordinate system a first angle about one of the first and second axes and define a projection of an image of a rotated second version of the symbol onto the viewing plane as the second view of the second version of the symbol.

4. The challenge symbol generator (114) of claim 2, further comprising a challenge symbol view generation module (208) operable to rotate the three dimensional coordinate system a first angle about one of the first and second axes, to rotate the three dimensional coordinate system a second angle about the other one of the first and second axes, to define a projection of an image of the rotated second version of the symbol within the rotated three dimensional coordinate system onto the viewing plane as the second view of the second version of the symbol.

5. The challenge symbol generator (114) of claim 1, wherein the dynamic symbol definition module (206) is operable to randomly generate the noise component.

6. The challenge symbol generator (114) of claim 1, further comprising a challenge symbol view generation module (208) operable to format the second view of the second version of the symbol for transmission from the first system (100) to a second system (1800).

7. The challenge symbol generator (114) of claim 6, wherein the challenge symbol view generation module (208) is operable to format the second view of the second version of the symbol to enable the second system (1800) to display the second view of the second version of the symbol onto the viewing plane on a display screen at the second system (1800), the viewing plane being defined at a view selection mechanism wherein selection of first and second areas of the viewing plane corresponds to selection of first and second selectable viewing options, respectively, and to display the first view of the second version of the symbol responsive to the selection of the first view option.

8. The challenge symbol generator (114) of claim 6, further comprising:

a memory (104) operable to store a first symbol identification data associated with the symbol at the first system (100);

an interface (110) operable to receive a second symbol identification data from the second system (1800) at the first system (100);

a processing unit (102) operable to determine whether the second symbol identification data matches the first symbol identification data and to identify a user of the second system (1800) as a human user based on the determination.

9. The challenge symbol generator (114) of claim 1, further comprising a symbol image generation module operable to define a format of the first version of the symbol as a distorted image of the symbol.

10. The challenge symbol generator (114) of claim 1, wherein a dynamic symbol definition module (206) is operable to define the second version of the symbol at the first system (100) by adding a noise component to the first version of the symbol that generates a false symbol view as the second view of the second version of the symbol and is operable to generate an indication that the false symbol view is not a representation of the symbol.

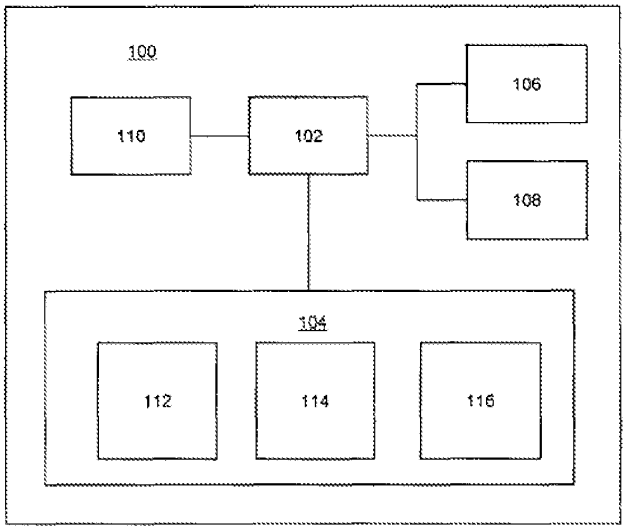


FIG. 1

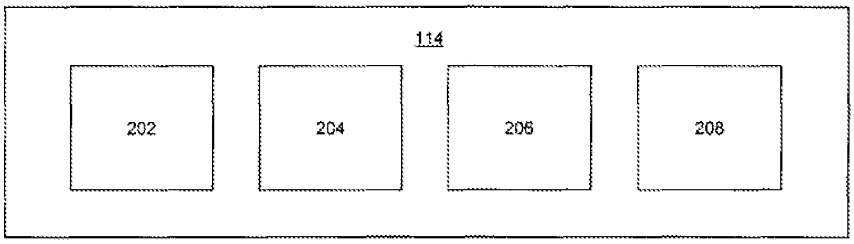


FIG. 2

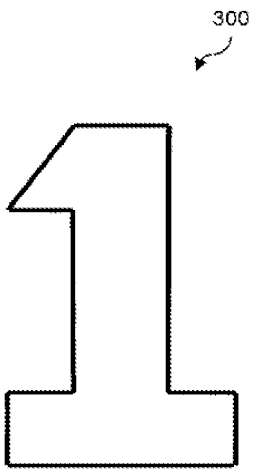


FIG. 3

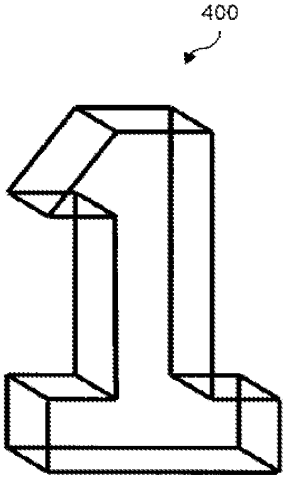


FIG. 4

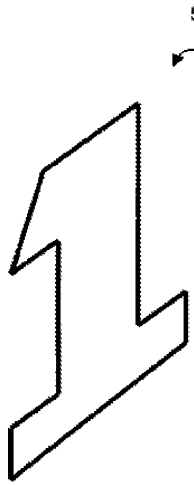


FIG. 5

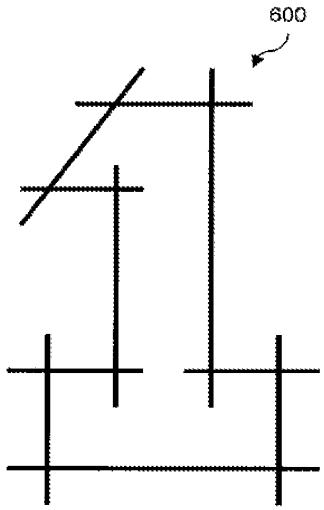


FIG. 6

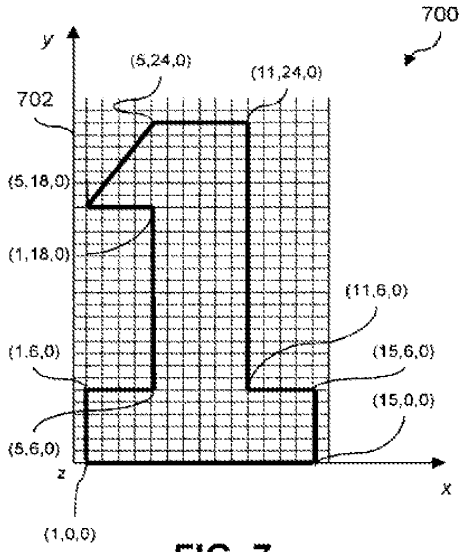


FIG. 7

800

Vector	From (x_1, y_1, z_1)	To (x_2, y_2, z_2)
Vector 1	(1, 0, 0)	(1, 6, 0)
Vector 2	(1, 6, 0)	(5, 6, 0)
Vector 3	(5, 6, 0)	(5, 18, 0)
Vector 4	(5, 18, 0)	(1, 18, 0)
Vector 5	(1, 18, 0)	(5, 24, 0)
Vector 6	(5, 24, 0)	(11, 24, 0)
Vector 7	(11, 24, 0)	(11, 6, 0)
Vector 8	(11, 6, 0)	(15, 6, 0)
Vector 9	(15, 6, 0)	(15, 0, 0)
Vector 10	(15, 0, 0)	(1, 0, 0)

FIG. 8

900

Vector	From (x_1, y_1, z_1)	To (x_2, y_2, z_2)
Vector 1	(1, 0, 5)	(1, 6, -5)
Vector 2	(1, 6, -2)	(5, 6, -4)
Vector 3	(5, 6, 1)	(5, 18, 3)
Vector 4	(5, 18, 4)	(1, 18, 2)
Vector 5	(1, 18, 5)	(5, 24, -1)
Vector 6	(5, 24, -3)	(11, 24, 0)
Vector 7	(11, 24, -1)	(11, 6, 5)
Vector 8	(11, 6, -5)	(15, 6, 4)
Vector 9	(15, 6, 0)	(15, 0, -3)
Vector 10	(15, 0, 2)	(1, 0, 1)

FIG. 9

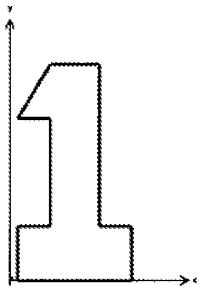


FIG. 10 (a)

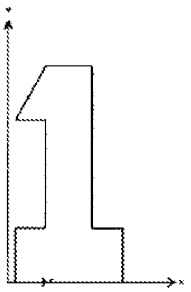


FIG. 10 (b)

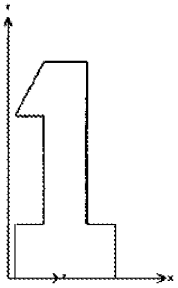


FIG. 10 (c)

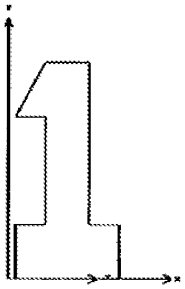


FIG. 10 (d)

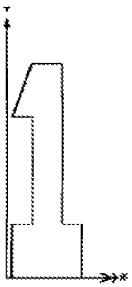


FIG. 10 (e)

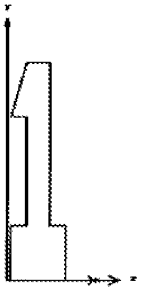


FIG. 10 (f)



FIG. 10 (g)

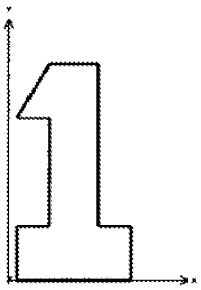


FIG. 11 (a)

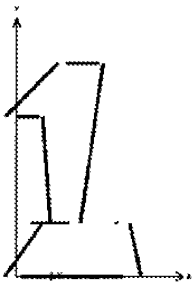


FIG. 11 (b)



FIG. 11 (c)

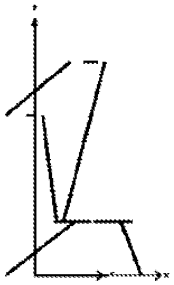


FIG. 11 (d)

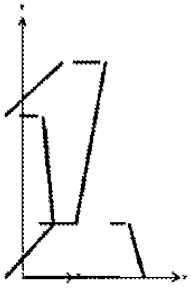


FIG. 11 (e)

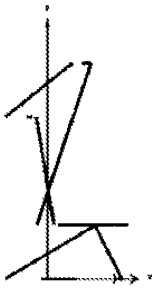


FIG. 11 (f)

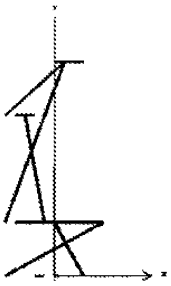


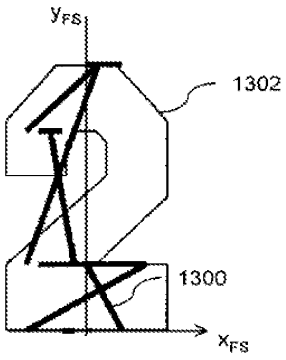
FIG. 11 (g)

1200

Vector	From (x_{FS1},y_{FS1})	To (x_{FS2}, y_{FS2})
Vector 1	(1, 24)	(16, 24)
Vector 2	(16, 24)	(16, 18)
Vector 3	(16, 18)	(9, 18)
Vector 4	(9, 18)	(16, 12)
Vector 5	(16, 12)	(16, 5)
Vector 6	(16, 5)	(11, 0)
Vector 7	(11, 0)	(5, 0)
Vector 8	(5, 0)	(0, 5)
Vector 9	(0, 10)	(0, 5)
Vector 10	(0, 10)	(6, 10)
Vector 11	(6, 10)	(6, 7)
Vector 12	(6, 7)	(7, 6)
Vector 13	(7, 6)	(9, 6)
Vector 14	(9, 6)	(10, 7)
Vector 15	(10, 7)	(10, 10)
Vector 16	(10, 10)	(0, 18)
Vector 17	(0, 18)	(0, 24)

FIG. 12

FIG. 13



1400

Vector	From (x_{FS1},y_{FS1}, z_{FS1})	To (x_{FS2},y_{FS2}, z_{FS2})
Vector 1	(1, 24, -1)	(16, 24, 1)
Vector 2	(16, 24, 2)	(16, 18, -2)
Vector 3	(16, 18, -3)	(9, 18, 3)
Vector 4	(9, 18, 4)	(16, 12, -4)
Vector 5	(16, 12, -5)	(16, 5, 5)
Vector 6	(16, 5, 1)	(11, 0, -1)
Vector 7	(11, 0, -2)	(5, 0, 2)
Vector 8	(5, 0, 3)	(0, 5, -3)
Vector 9	(0, 10, -4)	(0, 5, 4)
Vector 10	(0, 10, 5)	(6, 10, -5)
Vector 11	(6, 10, -1)	(6, 7, 1)
Vector 12	(6, 7, 2)	(7, 6, -2)
Vector 13	(7, 6, -3)	(9, 6, 3)
Vector 14	(9, 6, 4)	(10, 7, -4)
Vector 15	(10, 7, -5)	(10, 10, 5)
Vector 16	(10, 10, 1)	(0, 18, -1)
Vector 17	(0, 18, -2)	(0, 24, 2)

FIG. 14

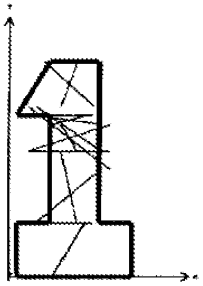


FIG. 15 (a)

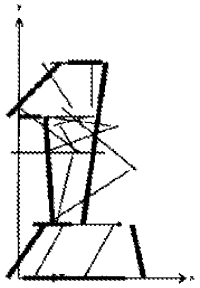


FIG. 15 (b)

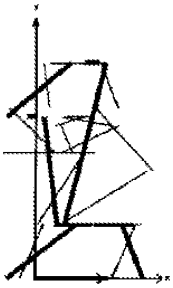


FIG. 15 (c)

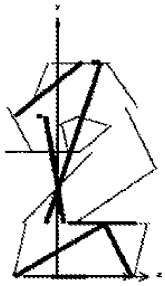


FIG. 15 (d)

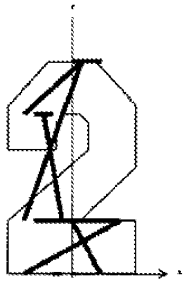


FIG. 15 (e)

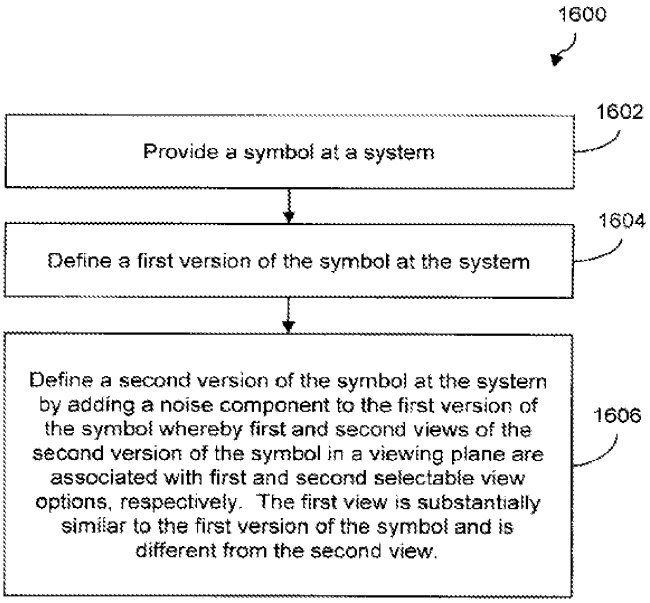

1600
1602
Provide a symbol at a system
1604
Define a first version of the symbol at the system
Define a second version of the symbol at the system by adding a noise component to the first version of the symbol whereby first and second views of the second version of the symbol in a viewing plane are associated with first and second selectable view options, respectively. The first view is substantially similar to the first version of the symbol and is different from the second view.
1606

FIG. 16

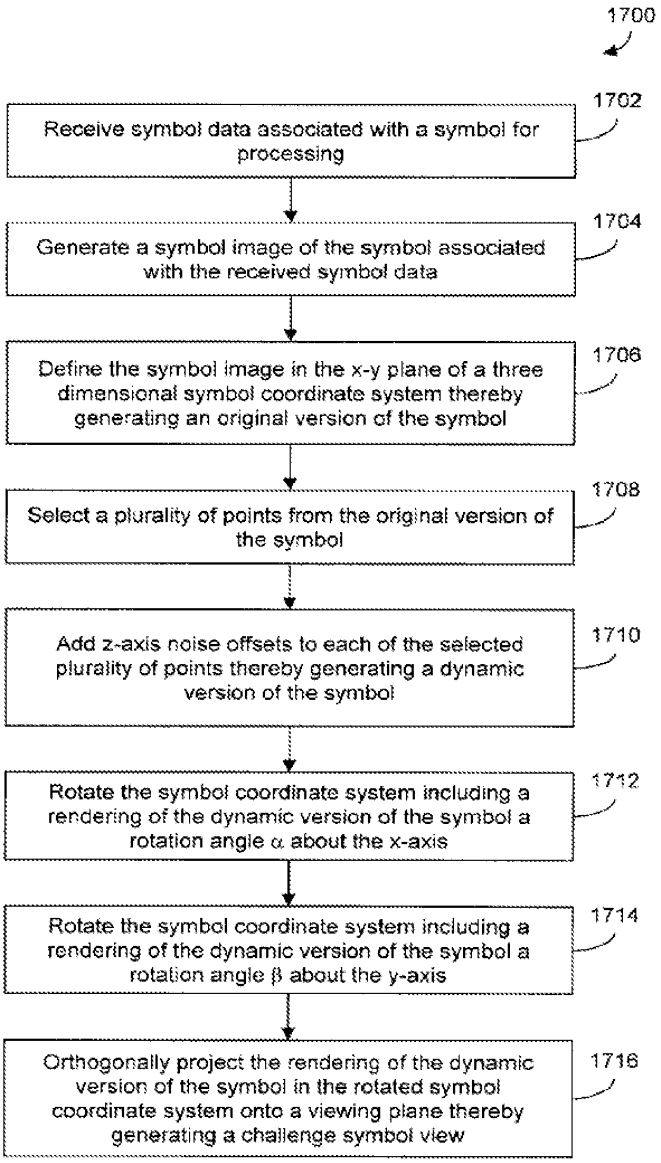

1700
Receive symbol data associated with a symbol for processing
1702
Generate a symbol image of the symbol associated with the received symbol data
1704
Define the symbol image in the x-y plane of a three dimensional symbol coordinate system thereby generating an original version of the symbol
1706
Select a plurality of points from the original version of the symbol
1708
Add z-axis noise offsets to each of the selected plurality of points thereby generating a dynamic version of the symbol
1710
Rotate the symbol coordinate system including a rendering of the dynamic version of the symbol a rotation angle α about the x-axis
1712
Rotate the symbol coordinate system including a rendering of the dynamic version of the symbol a rotation angle β about the y-axis
1714
Orthogonally project the rendering of the dynamic version of the symbol in the rotated symbol coordinate system onto a viewing plane thereby generating a challenge symbol view
1716

FIG. 17

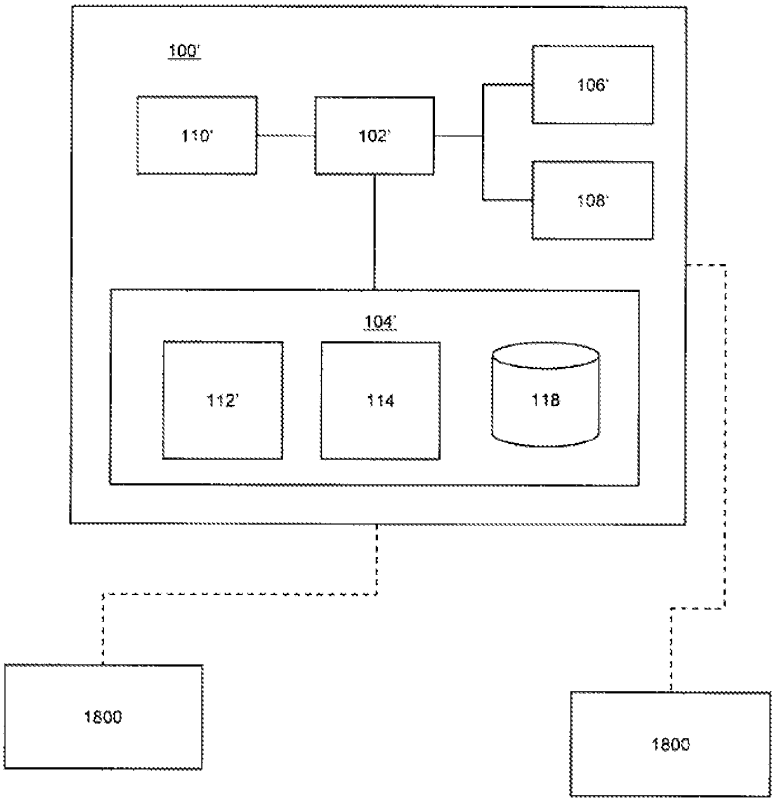


FIG. 18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/076828

A. CLASSIFICATION OF SUBJECT MATTER

G06F 17/00(2006.01)i, G06F 15/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC8 G06F 17/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

ekipass "identification, data, security, agent, pattern, recognition, symbol, noise, angle, rotation, vector"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2003/081523 A1 (BRITISH TELECOMMUNICATIONS PUBLIC LIMITED CO., LTD.) 02 OCT. 2003 See abstract; figures 2A~4. claims 1,10.	1-10
A	WO 96/39675 A1 (MOTOROLA INC.) 12 DEC. 1996 See abstract; figure 1. claims 1,5.	1-10
A	JP 10247221 A (MITSUBISHI CO., LTD.) 14 SEP. 1998 See abstract; figures 1~4. claim 1.	1-10

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
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Date of the actual completion of the international search	Date of mailing of the international search report
28 JANUARY 2008 (28.01.2008)	**28 JANUARY 2008 (28.01.2008)**
Name and mailing address of the ISA/KR Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer KIM, Jung Jin Telephone No. 82-42-481-5962

Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2007/076828

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO2003081523A1	02.10.2003	AU2003215755A1	08.10.2003
		CA2479223A1	02.10.2003
		CN1643540A	20.07.2005
		DE60303138T2	31.08.2006
		EP1488371A1	22.12.2004
		EP1488371B1	04.01.2006
		ES2256768T3	16.07.2006
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		KR10200401105793	16.12.2004
		US20050169535A1	04.08.2005
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		CN1121662C	17.09.2003
		CN1187256A	08.07.1998
		KR1019990022461	25.03.1999
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JP10247221A	14.09.1998	CN1201207	09.12.1998
		JP10247221A2	14.09.1998
		KR1019980079762	25.11.1998
		TW399187B	21.07.2000

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Electronic Acknowledgement Receipt	
EFS ID:	13924827
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	05-OCT-2012
Filing Date:	29-JUN-2009
Time Stamp:	17:54:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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4	Other Reference-Patent or Application Document	ARBEL.pdf	338154 1b14f871eaf587eeb7f401054c9fd2b2b9b3a605	no	4
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5	Non Patent Literature	ARRENIUS.pdf	1020328 0e702b76275b6f254eb4a8c4a5df37be79a23a7f	no	61
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6	Non Patent Literature	BAIRD.pdf	610739 6565c309403a88539496d74ef18c8ae5b41e7d77	no	12
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7	Non Patent Literature	BEUTNAGEL.pdf	138514 5e3a8a0a1ac1d1bb03491f3e347c0775e58c1707	no	4
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9	Foreign Reference	EP2045754.pdf	414042 4e2f814118f940e449e055632e3977c47378c71b	no	6
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12	Non Patent Literature	GOSSWEILER.pdf	1055428 d8aa522d8bb4b68654fa1a1cdd79c0dc1e40018b	no	10
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13	Foreign Reference	ISR.pdf	1201662 3f11c2448d2b19deb84aca62025ca7245781b650	no	18
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23	Non Patent Literature	SCHUCKERS.pdf	493511 45016dd011e448e52ad91836840c7ff561ebd8dc	no	7
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATIONS OF:
John Nicholas Gross

* * *

STATEMENT UNDER 37 C.F.R. § 3.73(b) AND POWER OF ATTORNEY

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

The John Nicholas and Kristin Gross Trust U/A/D April 13, 2010 ("the Trust"), states that it is the owner of the entire right, title, and interest in the patent applications identified below by virtue of assignments from the inventor(s) which were recorded in the assignment records of the U.S. Patent and Trademark Office on Reel 025204, at Frame 0115 on October 27, 2010.

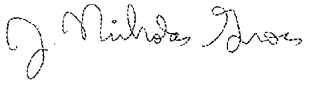
As the assignee of the following patent applications, the Trust hereby revokes all prior powers of attorney and authorizations of agent and appoints the practitioners associated with **Customer Number 52447** as its attorney(s) and/or agent(s) to prosecute the patent applications identified below and to transact all business in the United States Patent and Trademark Office connected therewith. This Power of Attorney pertains to:

1. U.S. Provisional Patent Application No. 61/043,363, filed April 8, 2008 and given docket no. JNG 2008P-1.
2. U.S. Provisional Patent Application No. 61/074,979, filed June 23, 2008 and given docket no. JNG 2008-2P.
3. U.S. Provisional Patent Application No. 61/076,495, filed June 27, 2008 and given docket no. JNG 2008-3P.
4. U.S. Patent Application No. 12/484,800, filed June 15, 2009 and given docket no. JNG 2009-1.
5. U.S. Patent Application No. 12/484,837, filed June 15, 2009 and given docket no. JNG 2009-2.

6. U.S. Patent Application No. 12/484,870, filed June 15, 2009 and given docket no. JNG 2009-3.
7. U.S. Patent Application No. 12/494,013, filed June 29, 2009 and given docket no. JNG 2009-4.
8. U.S. Patent Application No. 12/494,065, filed June 29, 2009 and given docket no. JNG 2009-5.
9. U.S. Patent Application No. 12/494,083, filed June 29, 2009 and given docket no. JNG 2009-6.
10. U.S. Patent Application No. 12/335,247, filed December 15, 2008 and given docket no. JNG 2008-10.
11. U.S. Patent Application No. 13/193,847, filed July 29, 2011 and given docket no. JNG 2008-10C1. (A continuation of Application No. 12/335,247.)
12. U.S. Patent Application No. 13/651,279, filed October 12, 2012 and given docket no. JNG 2008-10C2. (A continuation of Application No. 12/335,247.)
13. U.S. Patent Application No. 13/651,171, filed October 12, 2012 and given docket no. JNG 2008-10DIV1. (A divisional of Application No. 12/335,247.)
14. U.S. Patent Application No. 13/651,197, filed October 12, 2012 and given docket no. JNG 2008-10DIV2. (A divisional of Application No. 12/335,247.)
15. U.S. Patent Application No. 13/651,229, filed October 12, 2012 and given docket no. JNG 2008-10DIV3. (A divisional of Application No. 12/335,247.)
16. U.S. Patent Application No. 13/651,243, filed October 12, 2012, and given docket no. JNG 2008-10DIV4. (A divisional of Application No. 12/335,247.)
17. U.S. Patent Application No. 13/651,254, filed October 12, 2012 and given docket no. JNG 2008-10DIV5. (A divisional of Application No. 12/335,247.)
18. U.S. Patent Application No. 13/651,267, filed October 12, 2012 and given docket no. JNG 2008-10DIV6. (A divisional of Application No. 12/335,247.)

Please direct all correspondence in the above-identified patent applications to the correspondence address associated with **Customer No. 52447**. The undersigned is authorized to sign and act on behalf of the Trust in this matter.

Respectfully submitted,

Date: October 17, 2012 By: 

J. Nicholas Gross
Trustee

Electronic Acknowledgement Receipt	
EFS ID:	14010387
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	17-OCT-2012
Filing Date:	29-JUN-2009
Time Stamp:	17:04:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	PofA373.pdf	83733 3cbccf859efcf480ab5ae36ef80a87c00e12c9fc	no	3
Warnings:					
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Total Files Size (in bytes):	83733

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National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5991617		1999-11-23	Powell	
	2	6397181		2002-05-28	Li et al.	
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	1	20030182119		2003-09-25	Junqua et al.	
	2	20050171851		2005-08-04	Applebaum et al.	
	3	20050267752		2005-12-01	Navratil et al.	
	4	20070071206		2007-03-29	Gainsboro et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-10-25
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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	14074463
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	25-OCT-2012
Filing Date:	29-JUN-2009
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Application Type:	Utility under 35 USC 111(a)

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6

CONFIRMATION NO. 1550

52447
PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

POA ACCEPTANCE LETTER

OC000000057292306

Date Mailed: 10/26/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/17/2012.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/zabraha/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12494083
Filing Date	2009-06-29
First Named Inventor	Gross, John Nicholas
Art Unit	2435
Examiner Name	Dada, Beemnet
Attorney Docket Number	JNG 2009-6

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5774837		1998-06-30	Yeldener at al.	
	2	5933803		1999-08-03	Ojala	
	3	5940799		1999-08-17	Bruckert et al.	
	4	6014441		2000-01-11	Mark	
	5	7222072		2007-05-22	Chang	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070073630		2007-03-29	Greene et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

	2	20080140420		2008-06-12	Lee		

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-11-20
Name/Print	Andrew McAleavey	Registration Number	50,535

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	14281442
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Elizabeth Symington
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	20-NOV-2012
Filing Date:	29-JUN-2009
Time Stamp:	17:07:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	updated_IDS.pdf	612067 f889ee03336b1dc4c6c9ce1d2ecc5064bc9b6914	no	4
Warnings:					
Information:					

Total Files Size (in bytes):	612067

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	INV001JOHN NICHOLAS GROSS	JNG 2009-6	1550

52447 7590 03/18/2013

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

EXAMINER	
DADA, BEEMNET W	
ART UNIT	PAPER NUMBER
2435	
MAIL DATE	DELIVERY MODE
03/18/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	12/494,083	GROSS, JOHN NICHOLAS	
	Examiner	Art Unit	
	BEEMNET DADA	2435	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2009*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-22* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☐ Claim(s) _____ is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☒ Claim(s) *1-22* are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-10 are drawn to a method for presenting and progressively reveling an image and determine accuracy of a response, classified in class 726, subclass 005.

   II. Claims 11-22 are drawn to a method for physical manipulation of challenge and response on a portable device, classified in class 340, subclass 407.1.

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the method for presenting and progressively reveling an image and determine accuracy of a response in subcombination I can be utilized in user authentication, while method for physical manipulation of challenge and response on a portable device in subcombination II is utilized in physical manipulation processing. See MPEP 806.05(d).

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should the applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over prior art, the evidence or admission may be used in a rejection under 35 U.S.C 103(a) of the other invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BEEMNET DADA whose telephone number is (571)272-3847. The examiner can normally be reached on Monday - Friday (9:00 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BEEMNET DADA/
Primary Examiner, Art Unit 2435

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATION OF:	CONFIRMATION NO. 1550
John Nicholas Gross	DOCKET: JNG 2009-6
APPLICATION NO.: 12/494,083	EXAMINER: DADA, B.
FILING DATE: June 29, 2009	ART UNIT: 2435

TITLE: PROGRESSIVE PICTORIAL & MOTION BASED CAPTCHAS

* * *

RESPONSE TO RESTRICTION REQUIREMENT

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the Restriction Requirement mailed March 18, 2013, Applicant respectfully elects the claims of Group I, claims 1-10, for examination on the merits. This election is made without traverse. If any questions arise, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

By: /Andrew McAleavey/
Andrew McAleavey
Reg. No. 50,535
Tel. 510-428-9778
Fax. 510-295-2490
Customer No. 52447

Date: March 22, 2013

Electronic Acknowledgement Receipt	
EFS ID:	15330151
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	22-MAR-2013
Filing Date:	29-JUN-2009
Time Stamp:	12:26:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	Response.pdf	53746 e6ae7d78af1abb2b7eba1ab752c5eb79328 79b9a	no	1
Warnings:					
Information:					

Total Files Size (in bytes):	53746

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

52447 7590 04/22/2013

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

EXAMINER	
DADA, BEEMNET W	
ART UNIT	PAPER NUMBER
2435	
MAIL DATE	DELIVERY MODE
04/22/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 12/494,083	Applicant(s) GROSS, JOHN NICHOLAS	
	Examiner BEEMNET DADA	Art Unit 2435	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-22* is/are pending in the application.

5a) Of the above claim(s) *11-22* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-10* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Interim copies:

a)☐ All b)☐ Some c)☐ None of the: Interim copies of the priority documents have been received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Applicant's election without traverse of Group I, claims 1-10 in the reply filed on 03/22/2013 is acknowledged.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 10/30/09, 11/11/11, 09/05/12, 10/05/12, 10/25/12 and 11/20/12 has been considered. The submission is in compliance with the provisions of 37 CFR 1.97. Form PTO-1449 is signed and attached hereto.

Drawings

The drawings filed on June 29, 2009 are accepted.

Specification

The specification filed June 29, 2009 is accepted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Mates US 2009/0313694 A1.

As per claims 1 and 6, Mates teaches a method of testing recognition of images for a CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) system comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises imagery other than words [paragraphs 0018-0019];

b. associating said electronic image with one or more concepts [paragraph 0020];

c. progressively revealing information over a first time period for said electronic image within an interface for said participant using said computing system [paragraph 0022];

d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image [paragraph 0023].

As per claim 2, Mates further teaches the method further including a step: calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time [paragraph 0023].

As per claim 3, Mates further teaches the method wherein said electronic image is presented at different time intervals with differing levels of resolution, noise and/or pixilation [paragraphs 0018-0019].

As per claims 4 and 5, Mates further teaches the method further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system [paragraph 0023].

As per claim 7, Mates further teaches the method wherein said responses are received in audible form and processed by a speech recognition device adapted to recognize human voices [paragraphs 0018-0019].

As per claims 8-10, Mates further teaches the method wherein the CAPTCHA challenge is embodied in a computer readable form and implemented as a routine executing on a portable computing device which also has motion and/or orientation sensors [paragraphs 0018-0019].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BEEMNET DADA whose telephone number is (571)272-3847. The examiner can normally be reached on Monday - Friday (9:00 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph P. Hirl can be reached on 571-272-3685. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BEEMNET DADA/
Primary Examiner, Art Unit 2435

Notice of References Cited	Application/Control No. 12/494,083	Applicant(s)/Patent Under Reexamination GROSS, JOHN NICHOLAS	
	Examiner BEEMNET DADA	Art Unit 2435	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2009/0313694	12-2009	MATES, John W.	726/21
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
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	12494083	GROSS, JOHN NICHOLAS
	Examiner	Art Unit
	BEEMNET DADA	2435

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Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
726	005	4/20/2013	BD

SEARCH NOTES		
Search Notes	Date	Examiner
East search	4/20/2013	BD
NPL search	4/20/2013	BD
Inventor name search	4/20/2013	BD

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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First Named Inventor	Gross, John Nicholas
Art Unit	2435
Examiner Name	Beemnet W. Dada
Attorney Docket Number	JNG 2009-6

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8036902		2011-10-11	Strom et al.	
	2	8032483		2011-10-04	Haveliwala et al.	
	3	8032481		2011-10-04	Pinckney et al.	
	4	8019127		2011-09-12	Misra	
	5	8005197		2011-08-23	Baird et al.	
	6	7929805		2011-04-19	Wang et al.	
	7	7917508		2011-03-29	Baluja et al.	
	8	7841940		2010-11-30	Bronstein	

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	9	7827265		2010-11-02	Cheever et al.	
	10	7725395		2010-05-25	Rui et al.	
	11	7603706		2009-10-13	Donnelly et al.	
	12	7516220		2009-04-07	Stiert	
	13	7505946		2009-03-17	Chellapilla et al.	

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2011-11-11
Name/Print	Andrew McAleavey	Registration Number	50,535

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

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	1	5774837		1998-06-30	Yeldener at al.	
	2	5933803		1999-08-03	Ojala	
	3	5940799		1999-08-17	Bruckert et al.	
	4	6014441		2000-01-11	Mark	
	5	7222072		2007-05-22	Chang	
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	1	20070073630		2007-03-29	Greene et al.	

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	2	20080140420		2008-06-12	Lee		

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Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-11-20
Name/Print	Andrew McAleavey	Registration Number	50,535

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	1	20090297064		2009-12-03	Koziol, et al.	

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	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-09-05
Name/Print	Andrew McAleavey	Registration Number	50,535

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	1	6879956		2005-04-12	Honda et al.	
	2	6697769		2004-02-24	Goodman et al.	
	3	6157912		2000-12-05	Kneser et al.	
	4	5897616		1999-04-27	Kanevsky et al.	
	5	6681205		2004-01-20	San Martin et al.	
	6	6851051		2005-02-01	Bolle et al.	
	7	6208970		2001-03-27	Ramanan	
	8	6195698		2001-02-27	Lillibridge et al.	

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	9	7945952		2011-05-17	Behforooz	
	10	7797191		2010-09-14	Cotten et al.	

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	1	20090012855		2009-01-08	Jamal et al.	
	2	20090055193		2009-02-26	Maislos et al.	
	3	20070282605		2007-12-06	Rajakumar	
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	6	20050228641		2005-10-13	Chelba et al.	
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	8	20050105712		2005-05-19	Williams et al.	
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	30	20090309698		2009-12-17	Headley et al.		
	31	20060074677		2006-04-06	DeSimone		
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	33	20100049526		2010-02-25	Lewis et al.		
	34	20070162761		2007-07-12	Davis et al.		
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	1	2008025019	WO		2008-02-28	DYNAMIC REPRESENTATION SYSTEMS, LLC		☐
	2	2045754	EP		2009-04-08	Joosten et al.		☐

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	1	ARBEL, Eran et al; "An automated method for distinguishing between humans and computers using voice," Provisional application number 60/891,042, filed 2/22/2007, 4 pages.	☐
	2	STONE, Jonathon; "A Guide To Speaker Verification," Produced by ICR Speech Solutions & Services, October 28, 2003, 11 pages.	☐
	3	REYNOLDS, Douglas et al.; "Automatic Speaker Recognition Recent Progress, Current Applications, and Future Trends," Presented at the AAAS 2000 Meeting Humans, Computers and Speech Symposium, 19 February 2000, 36 pages.	☐
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	5	NASS, Clifford et al.; "Does Computer-Synthesized Speech Manifest Personality? Experimental Tests of Recognition, Similarity-Attraction, and Consistency-Attraction," Journal of Experimental Psychology: Accepted April 3, 2001, Vol. 7, No. 3, 171-181.	☐
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	10	REYNOLDS, Douglas; "Automatic Speaker Recognition: Current Approaches and Future Trends," This paper is based in part on the tutorial "Speaker Verification: From Research to Reality" by D.A. Reynolds and L.P. Heck, ICASSP 2001, 6 pages.	☐

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	11	MORI, Greg et al.; "Recognizing Objects in Adversarial Clutter: Breaking a Visual CAPTCHA," University of California Berkeley Computer Science Department, 2003, 8 pages.	☐
	12	GOSSWEILER, Rich et al.; "What's Up CAPTCHA? A CAPTCHA Based On Image Orientation," WWW 2009, April 20–24, 2009, Madrid, Spain, 10 pages.	☐
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	15	POPE, Clark et al.; Abstract of "Is It Human or Computer? Defending E-Commerce with Captchas," IT Professional, vol. 7, no. 2, Mar./Apr. 2005, 1 page.	☐
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	20	GOLLE, P.; "Machine learning attacks against the Asirra CAPTCHA," in proceedings of the 15th ACM Conference on Computer and Communications Security, Alexandria, Virginia, USA, February 28, 2008, 535-542.	☐
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	23	Schlaikjer. "A Dual-Use Speech CAPTCHA: Aiding Visually Impaired Web Users while Providing Transcriptions of Audio Streams," Technical Report CMU-LTI-07-014, Carnegie Mellon University. November 2007.	☐
	24	Bohr et al.; "Improving auditory CAPTCHA security." ISR Tech. rep., University of Maryland, College Park, MD, 2008.	☐

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	2	20050171851		2005-08-04	Applebaum et al.	
	3	20050267752		2005-12-01	Navratil et al.	
	4	20070071206		2007-03-29	Gainsboro et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2012-10-25
Name/Print	Andrew McAleavey	Registration Number	50,535

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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	First Named Inventor	Gross
	Art Unit	2431
	Examiner Name	
	Attorney Docket Number	JNG 2009-6

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	1	20070018393		2007-01-25	Ritter et al.	
	2	20090113294		2009-04-30	Sanghavi et al.	
	3	20070016689		2007-01-18	Birch	
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	Attorney Docket Number	JNG 2009-6

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	GOSSWEILER, Rich et al.; "What's Up CAPTCHA? A CAPTCHA Based On Image Orientation," WWW 2009, April 20–24, 2009, Madrid, Spain, 10 pages.	☐
	2	VON AHN, Luis et al.; "Labeling Images with a Computer Game," CHI 2004, April 24–29, 2004, Vienna, Austria, 8 pages.	☐
	3	VON AHN, Luis et al. "Peekaboom: a game for locating objects in images," Proceedings of the SIGCHI conference on Human Factors in computing systems, April 22-27, 2006, Montréal, Québec, Canada, 23 pages	☐
	4	"Guess-a-Sketch," web.archive.org/web/…/GAS.html, Nov 24, 2002, 5 pages.	☐
	5	"GWAP," http://blog.gwap.com/2008/05/hellow-world.html, May 13, 2008, 3 pages.	☐

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Examiner Signature	/Beemnet Dada/	Date Considered	04/20/2013

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BD/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATION OF:	CONFIRMATION NO. 1550
John Nicholas Gross	DOCKET: JNG 2009-6
APPLICATION NO.: 12/494,083	EXAMINER: DADA, B.
FILING DATE: June 29, 2009	ART UNIT: 2435

TITLE: PROGRESSIVE PICTORIAL & MOTION BASED CAPTCHAS

* * *

AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.111

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the non-final Office Action mailed April 22, 2013, please enter and consider the following amendments and remarks.

AMENDMENTS

IN THE CLAIMS:

Please enter the following set of claims:

1. (Currently Amended) A method of testing recognition of images for a CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) system comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises a set of imagery data other than words, and wherein said electronic image is configured such that a subset of said set of imagery data for said electronic image can be made perceptible in a first image state;

b. associating said electronic image with one or more concepts;

c. presenting said electronic image in said first image state and progressively revealing information over a first time period ~~for said electronic image~~ within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image.

2. (Original) The method of claim 1 further including a step: calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time.

3. (Currently Amended) The method of claim 1 wherein said ~~electronic image is presented~~ progressively revealing information comprises presenting said electronic image at different time intervals with differing levels of resolution, noise and/or pixelation.

4. (Original) The method of claim 1 further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system.

Intuition Machines Exhibit 1004, Page 261 of 376

5. (Original) The method of claim 4 wherein said second computing system is associated with a portable electronics device.

6. (Currently Amended) A method of providing a visual CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises a set of imagery data other than words and wherein said electronic image is configured such that a subset of said imagery data for said electronic image can be made perceptible in a first image state;

b. associating said electronic image with one or more concepts;

c. progressively revealing information in said electronic image over a first time period ~~for said electronic image~~ within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to detect if a guess from said participant for said one or more concepts associated with said electronic image meets a required threshold.

7. (Original) The method of claim 6, wherein said responses are received in audible form and processed by a speech recognition device adapted to recognize human voices.

8. (Original) The method of claim 6 wherein the CAPTCHA challenge is embodied in a computer readable form and implemented as a routine executing on a portable computing device which also has motion and/or orientation sensors.

9. (Original) The method of claim 8 wherein the visual CAPTCHA challenge is combined with a physical CAPTCHA challenge requiring the user to manipulate the portable computing device in a prescribed manner.

10. (Original) The method of claim 9 wherein said physical CAPTCHA challenge is used to interact with elements of said electronic image and/or other objects presented in said interface.

11. – 22. (Canceled).

23. (New) A method of testing recognition of images for a CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) system comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises a set of imagery data other than words, and wherein said electronic image is presentable with differing amounts of data, including a first image state in which only a first portion of the image information therein is perceptible;

b. associating said electronic image with one or more concepts;

c. presenting said electronic image in said first image state and progressively revealing additional information in said electronic image over a first time period within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image.

24. (New) The method of claim 23 further including a step: calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time.

25. (New) The method of claim 23 wherein said progressively revealing additional information comprises presenting said electronic image at different time intervals with differing levels of resolution, noise and/or pixelation.

26. (New) The method of claim 23 wherein said automatically processing responses occurs during said presenting said electronic image and said progressively revealing additional information.

27. (New) The method of claim 23 further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system.

28. (New) The method of claim 27 wherein said second computing system is associated with a portable electronics device.

Intuition Machines Exhibit 1004, Page 264 of 376

REMARKS

After entry of this amendment, claims 1-10 and 23-28 will be pending in this patent application. By this amendment, Applicant has canceled non-elected claims 11-22 without prejudice or disclaimer, and has entered new claims 23-27, which fall within the scope of the elected claims. Applicant has also amended independent claims 1 and 6 and dependent claim 3. No new matter has been added.

Claim Rejection under 35 U.S.C. § 102(e)

Claims 1-10 were rejected under 35 U.S.C. § 102(e) over Mates, U.S. Patent Application Publication No. 2009/0313694. Applicant respectfully traverses this rejection in view of the claims as amended.

As amended, claims 1 and 6 recite a method that includes "automatically electing an electronic image for a participant." This electronic image "comprises a set of imagery data other than words" and "is configured such that a subset of [the] set of imagery data…can be made perceptible in a first image state." The claims also recite "presenting [the] electronic image in [the] first image state and progressively revealing information in [the] electronic image over a first time period." The electronic image is associated with one or more concepts, and the method processes participant responses to the progressively-revealed electronic image to correlate their accuracy with the concepts (claim 1) or to detect if a guess meets a required threshold (claim 6).

That is not what Mates discloses. Instead, Mates discloses an image CAPTCHA challenge in which a single, static image or images is transmitted to the user. That static image may be a stereogram (see Mates, e.g., at paragraph [0019]). The Examiner relies on paragraph [0022] of Mates for Applicant's recited step of progressively revealing information in the electronic image over a period of time. Neither paragraph [0022] nor any other paragraph of Mates discloses at least that feature. What paragraph [0022] actually discloses is that when a user perceives the (static) image, he or she returns a response – it says nothing about progressively revealing information in an image.

In fact, Mates actually teaches the exact opposite. In Mates, images may be sent to the user together or separately (see paragraph [0026]), but as the reference discloses in paragraph [0028]:

> When a pair of images are used for the challenge image 24, no single image of an image group, whether in an autostereogram, RDS, SIRDs, etc., contains any information indicating the recognizable image in the absence of the other image(s). All images are required to be viewed concurrently to ascertain the recognizable image needed to pass the challenge response test.

Thus, in Mates, images cannot be revealed progressively; all of the information must be viewed concurrently.

Accordingly, Applicant submits that independent claims 1 and 6 are not anticipated by Mates. Furthermore, the dependent claims are believed to be patentable for at least the same reasons. Therefore, Applicant respectfully requests that the rejection be withdrawn.

The New Claims

Independent claim 23 has recitations similar to independent claims 1 and 6 and is believed to be patentable for at least the same reasons as claims 1 and 6.

CONCLUSION

In view of the foregoing, this application is believed to be in condition for allowance, and a timely Notice to that effect is earnestly solicited. If questions relating to patentability remain, the Examiner is invited to contact the undersigned.

Respectfully submitted,

By: /Andrew McAleavey/
Andrew McAleavey
Reg. No. 50,535
Tel. 510-428-9778
Fax. 510-295-2490
Customer No. 52447

Date: July 22, 2013

Electronic Patent Application Fee Transmittal	
Application Number:	12494083
Filing Date:	29-Jun-2009
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Filer:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	16383975
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	22-JUL-2013
Filing Date:	29-JUN-2009
Time Stamp:	19:53:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Information Disclosure Statement (IDS) Form (SB08)	updated_IDS.pdf	612528 8953310c31cf3dfec94c09a072ad21010c31c8d4	no	5
Warnings:					
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2		Response.pdf	77965 76c9439546b2413115f0118c7836b5a9813540bc	yes	7
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	7	
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3	Fee Worksheet (SB06)	fee-info.pdf	30464 59683d3e1bb21b8462128efaca2605cf17e74726	no	2
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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	Attorney Docket Number	JNG 2009-6

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	1	6191777		2001-02-20	Yasuhara et al.	
	2	6763373		2004-07-13	Shiigi	
	3	6878062		2005-04-12	Bjorklund et al.	
	4	7707251		2010-04-27	Birch	
	5	7785180		2010-08-31	von Ahn et al.	
	6	7887058		2011-02-15	Ritter et al.	
	7	7909695		2011-03-22	Phelps, Jr. et al.	
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	1	20020016196		2002-02-07	Orak	
	2	20020090993		2002-07-11	Koshiro et al.	
	3	20030214553		2003-11-20	Dodge	
	4	20040158495		2004-08-12	Gennaro et al.	
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Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2013-07-22
Name/Print	Andrew McAleavey	Registration Number	50535

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/494,083	Filing Date 06/29/2009	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **07/22/2013**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 16	Minus	** 22	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***4	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/NICOLE LAWRENCE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12494083
Filing Date	2009-06-29
First Named Inventor	Gross, John Nicholas
Art Unit	2435
Examiner Name	Dada, B.
Attorney Docket Number	JNG 2009-6

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5465982	A	1995-11-14	Rebane	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20080127302	A1	2008-05-29	Qvarfordt	
	2	20040158495	A1	2004-08-12	Gennaro	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, B.
	Attorney Docket Number	JNG 2009-6

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, B.
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2013-08-05
Name/Print	Andrew McAleavey	Registration Number	50535

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	16522872
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	07-AUG-2013
Filing Date:	29-JUN-2009
Time Stamp:	12:58:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	updated_IDS.pdf	611954 090afccbc681c10723c39a25cb0e3668998561e4	no	4
Warnings:					
Information:					

Total Files Size (in bytes):	611954

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

52447 7590 10/31/2013

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

EXAMINER	
DADA, BEEMNET W	
ART UNIT	PAPER NUMBER
2435	
MAIL DATE	DELIVERY MODE
10/31/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 12/494,083	Applicant(s) GROSS, JOHN NICHOLAS	
	Examiner BEEMNET DADA	Art Unit 2435	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/22/13*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-10 and 23-28* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-10 and 23-28* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

This office action is in reply to an amendment filed on July 22, 2013. Claims 1, 3 and 6 have been amended and new claims 23-28 have been added. Claims 1-10 and 23-28 are pending.

Response to Arguments

Applicant's arguments with respect to claims 1 and 6 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 and 23-28 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Mates US 2009/0313694 A1 in view of Sanghavi et al. US 2009/01132594 A1 (hereinafter Sanghavi).

As per claims 1, 6 and 23, Mates teaches a method of testing recognition of images for a CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans and Computers Apart) system comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises imagery other than words [paragraphs 0018-0019];

b. associating said electronic image with one or more concepts [paragraph 0020];

c. progressively revealing information over a first time period for said electronic image within an interface for said participant using said computing system [paragraph 0022];

d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image [paragraph 0023].

In the same field of endeavor, Sanghavi teaches progressive CAPTCHAS including an electronic image is configured such that a subset of set of imagery data for said electronic image can be made perceptible in a first image state [paragraphs 0038 and figure 6]; and presenting the electronic image in a first image state and progressively revealing information over a first time period [paragraph 0038 and figure 6]. It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to employ the teachings of Sanghavi within the system of Mates in order to enhance the security of the system.

As per claims 2 and 24, Mates further teaches the method further including a step: calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time [paragraph 0023].

As per claims 3 and 25, Mates further teaches the method wherein said electronic image is presented at different time intervals with differing levels of resolution, noise and/or pixilation [paragraphs 0018-0019].

As per claims 4, 5 and 27, Mates further teaches the method further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system [paragraph 0023].

As per claim 7, Mates further teaches the method wherein said responses are received in audible form and processed by a speech recognition device adapted to recognize human voices [paragraphs 0018-0019].

As per claims 8-10 and 28, Mates further teaches the method wherein the CAPTCHA challenge is embodied in a computer readable form and implemented as a routine executing on a portable computing device which also has motion and/or orientation sensors [paragraphs 0018-0019].

As per claim 26, Mates further teaches the method wherein said automatically processing responses occurs during said presenting said electronic image and said progressively revealing additional information [paragraphs 0018-0019].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BEEMNET DADA whose telephone number is (571)272-3847. The examiner can normally be reached on Monday - Friday (9:00 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph P. Hirl can be reached on 571-272-3685. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/BEEMNET DADA/
Primary Examiner, Art Unit 2435

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12494083
Filing Date	2009-06-29
First Named Inventor	John Nicholas Gross
Art Unit	2435
Examiner Name	Dada, B.
Attorney Docket Number	JNG 2009-6

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6191777		2001-02-20	Yasuhara et al.	
	2	6763373		2004-07-13	Shiigi	
	3	6878062		2005-04-12	Bjorklund et al.	
	4	7707251		2010-04-27	Birch	
	5	7785180		2010-08-31	von Ahn et al.	
	6	7887058		2011-02-15	Ritter et al.	
	7	7909695		2011-03-22	Phelps, Jr. et al.	
	8	8166388		2012-04-24	Gounares et al.	

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	1	20020016196		2002-02-07	Orak	
	2	20020090993		2002-07-11	Koshiro et al.	
	3	20030214553		2003-11-20	Dodge	
	4	20040158495		2004-08-12	Gennaro et al.	
	5	20050184461		2005-08-25	Cogliano et al.	
	6	20070213111		2007-09-13	MacIver et al.	

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Examiner Signature	/Beemnet Dada/	Date Considered	10/30/2013

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Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2013-07-22
Name/Print	Andrew McAleavey	Registration Number	50535

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12494083	GROSS, JOHN NICHOLAS
	Examiner	Art Unit
	BEEMNET DADA	2435

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
726	005	10/30/2013	BD

SEARCH NOTES		
Search Notes	Date	Examiner
East search	10/30/2013	BD
NPL search	10/30/2013	BD
Inventor name search	10/30/2013	BD

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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	Art Unit	2435
	Examiner Name	Dada, B.
	Attorney Docket Number	JNG 2009-6

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5465982	A	1995-11-14	Rebane	

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	1	20080127302	A1	2008-05-29	Qvarfordt	
	2	20040158495	A1	2004-08-12	Gennaro	

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Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2013-08-05
Name/Print	Andrew McAleavey	Registration Number	50535

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	1	7679604		2010-03-16	Uhlik et al.	

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Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2013-11-15
Name/Print	Andrew McAleavey	Registration Number	50535

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal	
Application Number:	12494083
Filing Date:	29-Jun-2009
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Filer:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Filed as Small Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	2806	1	90	90
		Total in USD ($)		**90**

Electronic Acknowledgement Receipt	
EFS ID:	17413913
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	15-NOV-2013
Filing Date:	29-JUN-2009
Time Stamp:	13:40:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$90
RAM confirmation Number	11143
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Information Disclosure Statement (IDS) Form (SB08)	updated_IDS.pdf	611770 3256df8e1abd7f260afb619d5e2a4699f7d18190	no	4
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30444 e1d440d85fa5ba2b9eb40d6ac3dff5d8982573b2	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	642214		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATION OF:	CONFIRMATION NO. 1550
John Nicholas Gross	DOCKET: JNG 2009-6
APPLICATION NO.: 12/494,083	EXAMINER: DADA, B.
FILING DATE: June 29, 2009	ART UNIT: 2435

TITLE: METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS (AS AMENDED)

* * *

AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.116

MAIL STOP AF
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the final Office Action mailed October 31, 2013, please enter and consider the following amendments and remarks.

AMENDMENTS

IN THE SPECIFICATION:

Please cancel the existing title and replace it with the following:

Methods for Presenting and Determining the Efficacy of Progressive Pictorial and Motion-Based CAPTCHAs

Intuition Machines Exhibit 1004, Page 309 of 376

IN THE ABSTRACT:

Please cancel the existing abstract and replace it with the following text:

Methods for presenting and determining the efficacy of progressive pictorial and motion-based CAPTCHAs are disclosed. The CAPTCHA system uses images, pictures, and/or motion for granting access to a computing system. The images can be culled from examples used in pictorial games, and can progressively presented to increase the strength of the CAPTCHA challenges. Speech recognition, motion and touch sensing can also be employed as parts of the challenge. When a CAPTCHA is presented, the methods may include steps of measuring efficacy by determining a percentage of users who are able to solve the CAPTCHA correctly within a defined period of time.

Intuition Machines Exhibit 1004, Page 310 of 376

IN THE CLAIMS:

Please enter the following set of claims:

1. (Currently Amended) A method of testing recognition of images for a ~~CAPTCHA (~~Completely Automatic Public Turing ~~Tests~~ Test To Tell Humans And Computers Apart~~)~~ (CAPTCHA) system comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises a set of imagery data other than words, and wherein said electronic image is configured such that a subset of said set of imagery data for said electronic image can be made perceptible in a first image state;

b. associating said electronic image with one or more concepts;

c. presenting said electronic image in said first image state and progressively revealing information over a first time period within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image; and

e. calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time.

2. (Canceled).

3. (Previously Presented) The method of claim 1 wherein said progressively revealing information comprises presenting said electronic image at different time intervals with differing levels of resolution, noise and/or pixelation.

4. (Original) The method of claim 1 further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system.

5. (Original) The method of claim 4 wherein said second computing system is associated with a portable electronics device.

6. (Currently Amended) A method of providing a visual ~~CAPTCHA (~~Completely Automatic Public Turing ~~Tests~~ Test To Tell Humans And Computers Apart~~)~~ (CAPTCHA) challenge comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises a set of imagery data other than words and wherein said electronic image is configured such that a subset of said imagery data for said electronic image can be made perceptible in a first image state;

b. associating said electronic image with one or more concepts;

c. progressively revealing information in said electronic image over a first time period within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to detect if a guess from said participant for said one or more concepts associated with said electronic image meets a required threshold; and

e. determining a percentage of participants with guesses meeting the required threshold within a predetermined time.

7. (Original) The method of claim 6, wherein said responses are received in audible form and processed by a speech recognition device adapted to recognize human voices.

8. (Original) The method of claim 6 wherein the CAPTCHA challenge is embodied in a computer readable form and implemented as a routine executing on a portable computing device which also has motion and/or orientation sensors.

9. (Original) The method of claim 8 wherein the visual CAPTCHA challenge is combined with a physical CAPTCHA challenge requiring the user to manipulate the portable computing device in a prescribed manner.

10. (Original) The method of claim 9 wherein said physical CAPTCHA challenge is used to interact with elements of said electronic image and/or other objects presented in said interface.

11. – 22. (Canceled).

23. (Currently Amended) A method of testing recognition of images for a ~~CAPTCHA (~~Completely Automatic Public Turing ~~Tests~~ Test To Tell Humans And Computers Apart~~)~~ CAPTCHA system comprising:

a. automatically electing an electronic image for a participant with a computing system, wherein said electronic image comprises a set of imagery data other than words, and wherein said electronic image is presentable with differing amounts of data, including a first image state in which only a first portion of the image information therein is perceptible;

b. associating said electronic image with one or more concepts;

c. presenting said electronic image in said first image state and progressively revealing additional information in said electronic image over a first time period within an interface for said participant using said computing system;

d. automatically processing responses from the participant with the computing system to correlate an accuracy of guesses from said participant for said one or more concepts associated with said electronic image; and

e. calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time.

24. (Canceled).

25. (Previously Presented) The method of claim 23 wherein said progressively revealing additional information comprises presenting said electronic image at different time intervals with differing levels of resolution, noise and/or pixelation.

26. (Previously Presented) The method of claim 23 wherein said automatically processing responses occurs during said presenting said electronic image and said progressively revealing additional information.

27. (Previously Presented) The method of claim 23 further including a step: using said electronic image within a CAPTCHA system for granting access to resources of a second computing system.

28. (Previously Presented) The method of claim 27 wherein said second computing system is associated with a portable electronics device.

REMARKS

After entry of this amendment, claims 1, 3-10, 23, and 25-28 will be pending in this patent application. By this amendment, Applicant has amended independent claims 1, 6, and 23 to include subject matter previously recited in dependent claims 2 and 24, respectively. Accordingly, Applicant has canceled claims 2 and 24 without prejudice or disclaimer. Additionally, Applicant has amended the title and abstract of the application to better reflect the subject matter that is currently being claimed. No new matter has been added. Applicant respectfully requests reconsideration and allowance of this patent application in view of the above amendments and the following remarks.

Applicant understands that because this application is under final rejection, entry is at the discretion of the Examiner. Applicant respectfully submits that this response should be entered as it implements an agreement on allowable subject matter reached during a personal interview.

The Personal Interview

On January 27, 2014, the undersigned held a personal interview with Examiner Beemnet Dada. Applicant and the undersigned appreciate the Examiner's time, willingness to meet in person, and thoughtful suggestions. During the interview, the Mates and Sanghavi references were discussed, and it was agreed that claim 2 is very likely to be allowable over the cited references. Additional summary of the interview can be found in the remarks that follow.

Claim Rejection under 35 U.S.C. § 103(a)

Claims 1-10 and 23-38 were rejected under 35 U.S.C. § 103(e) over Mates, U.S. Patent Application Publication No. 2009/0313694, in view of Sanghavi, U.S. Patent Application Publication No. 2009/0113294. Applicant respectfully traverses this rejection in view of the claims as amended.

Applicant's position on the Mates reference has not changed since the first Office Action, and as was discussed during the personal interview, the Examiner has not responded on the record to that position. Briefly, Mates discloses an image CAPTCHA challenge in which a single, static image or images is transmitted to the user. That static

image may be a stereogram (see Mates, e.g., at paragraph [0019]). The Examiner relies on paragraph [0022] of Mates for Applicant's recited step of progressively revealing information in the electronic image over a period of time. Neither paragraph [0022] nor any other paragraph of Mates discloses at least that feature. What paragraph [0022] actually discloses is that when a user perceives the (static) image, he or she returns a response – it says nothing about progressively revealing information in an image.

In fact, Mates actually teaches the exact opposite. In Mates, images may be sent to the user together or separately (see paragraph [0026]), but as the reference discloses in paragraph [0028]:

> When a pair of images are used for the challenge image 24, no single image of an image group, whether in an autostereogram, RDS, SIRDs, etc., contains any information indicating the recognizable image in the absence of the other image(s). All images are required to be viewed concurrently to ascertain the recognizable image needed to pass the challenge response test.

Thus, in Mates, images cannot be revealed progressively; all of the information must be viewed concurrently.

As was discussed during the personal interview, the Examiner's position in the final Office Action is apparently that Sanghavi teaches a progressive CAPTCHA, and that it would have been obvious to modify the teachings of Mates to deliver a progressive pictorial CAPTCHA as Applicant recites in the claims. Applicant strongly disagrees.

Applicant respectfully submits that Mates teaches away from such a combination. As Applicants explained above and in the previous Office Action, in Mates, all the image data must be present at the same time in order for the stereoscopic image that forms the CAPTCHA to be viewed by the user. If one were to deliver image data progressively, it would render Mates unsuitable for its intended purpose.

During the personal interview, it was agreed that claim 2 would be allowable over the prior art of record, because (contrary to the Examiner's assertions in the final Office Action), whatever Mates and Sanghavi may disclose with respect to CAPTCHAs, neither reference discloses or suggests "calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time." The

Examiner cites paragraph [0023] of Mates in the final Office Action, but while that paragraph may disclose checking to see whether an individual user's guess is correct, it does not disclose or suggest calculating an overall percentage of users who accurately guess the underlying concept within a predetermined time.

For that reason, and to expedite prosecution, Applicant has amended independent claims 1 and 23 to include that feature, and has included similar language in independent claim 6 as well. Accordingly, Applicant respectfully submits that the claims should be allowable, and respectfully requests that the rejection be withdrawn.

In making these amendments to the claims, Applicant does not concede that Sanghavi discloses progressive pictorial CAPTCHA as envisioned by Applicant or that the reference is properly applied. Applicant's basic position on the Sanghavi reference is articulated in the Specification on page 2, at lines 11-18. As was discussed during the personal interview, Applicant may file a continuation to claim certain specific distinctions between the Sanghavi system and Applicant's system.

CONCLUSION

In view of the foregoing, this application is believed to be in condition for allowance, and a timely Notice to that effect is earnestly solicited. If questions relating to patentability remain, the Examiner is invited to contact the undersigned.

Respectfully submitted,

By: /Andrew McAleavey/
Andrew McAleavey
Reg. No. 50,535
Tel. 510-428-9778
Fax. 510-295-2490
Customer No. 52447

Date: January 28, 2014

Intuition Machines Exhibit 1004, Page 317 of 376

Electronic Acknowledgement Receipt	
EFS ID:	18044191
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	Progressive Pictorial & Motion Based CAPTCHAs
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	28-JAN-2014
Filing Date:	29-JUN-2009
Time Stamp:	12:44:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	86407 c5f3730aa43152ed4c48d26df04ddded4010d2ed	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Specification	2	2
	Abstract	3	3
	Claims	4	7
	Applicant Arguments/Remarks Made in an Amendment	8	10
Warnings:			
Information:			
	Total Files Size (in bytes):	86407	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/494,083	Filing Date 06/29/2009	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **01/28/2014**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 14	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/STEFANIE BRYCE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

52447 7590 01/31/2014

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

EXAMINER	
DADA, BEEMNET W	
ART UNIT	PAPER NUMBER
2435	

NOTIFICATION DATE	DELIVERY MODE
01/31/2014	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ANDREW@PATENTBEST.COM
patent@patentbest.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	12/494,083	GROSS, JOHN NICHOLAS	
	Examiner	Art Unit	
	BEEMNET DADA	2435	

All participants (applicant, applicant's representative, PTO personnel):

(1) *BEEMNET DADA*. (3)_____.

(2) *Andrew McAleavey*. (4)_____.

Date of Interview: *27 January 2014*.

Type: ☐ Telephonic ☐ Video Conference
☒ Personal [copy given to: ☐ applicant ☒ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1 and 2*.

Identification of prior art discussed: *Mates 2009/0313694 A1 and Sanghavi et al. US 2009/0113294 A1*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant pointed out differences between the claimed invention and Mates. Examiner pointed out how the claim was rejected in view of Mates and Sanghavi. Claim 2 was discussed as being likely to be allowable of the prior art of record.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/BEEMNET DADA/ Primary Examiner, Art Unit 2435	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

52447 7590 02/12/2014

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

EXAMINER	
DADA, BEEMNET W	
ART UNIT	PAPER NUMBER
2435	

DATE MAILED: 02/12/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

TITLE OF INVENTION: PROGRESSIVE PICTORIAL & MOTION BASED CAPTCHAS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	05/12/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

52447 7590 02/12/2014
PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

TITLE OF INVENTION: PROGRESSIVE PICTORIAL & MOTION BASED CAPTCHAS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	05/12/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
DADA, BEEMNET W	2435	726-005000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

52447 7590 02/12/2014

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

EXAMINER	
DADA, BEEMNET W	
ART UNIT	**PAPER NUMBER**
2435	

DATE MAILED: 02/12/2014

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 916 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 916 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 12/494,083	Applicant(s) GROSS, JOHN NICHOLAS	
	Examiner BEEMNET DADA	Art Unit 2435	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *after final amendment filed on 01/28/2014*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1,3-10,23 and 25-28*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/BEEMNET DADA/
Primary Examiner, Art Unit 2435

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	"200901132594"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 14:56
L2	4	"20090132594"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 14:59
L3	6	"20090113294"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 14:59
L4	3	"20090313694"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:02
L5	9	captcha with progress$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:04
L6	0	726/003,005.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:06
L7	35	726/17,21.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:06
L8	18	726/21.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:06
L9	426	"726"/$.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:06
L10	50	"726"/$.ccls. and (captcha).ti.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:06
L11	119	726/3,5.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:07
L12	2	"7679604".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:08
L13	35	726/17,21.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:18
L14	55	726/4.ccls. and captcha	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/02/05 15:19

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L15	2	(progress$4 with captcha)	USPAT; UPAD	OR	OFF	2014/02/05 15:19
L16	0	(progress$4 with captcha).clm.	USPAT; UPAD	OR	OFF	2014/02/05 15:21

2/5/2014 3:22:21 PM

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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BIB DATA SHEET

CONFIRMATION NO. 1550

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/494,083	06/29/2009	726	2435	JNG 2009-6

APPLICANTS

INVENTORS
JOHN NICHOLAS GROSS, BERKELEY, CA;

**** CONTINUING DATA ***************************
This appln claims benefit of 61/076,495 06/27/2008

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
07/08/2009

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /BEEMNET W DADA/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	16	22	4

ADDRESS

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608
UNITED STATES

TITLE

Progressive Pictorial & Motion Based CAPTCHAs

FILING FEE RECEIVED		
624	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12494083	GROSS, JOHN NICHOLAS
	Examiner	**Art Unit**
	BEEMNET DADA	2435

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	14	
/BEEMNET DADA/ Primary Examiner.Art Unit 2435	02/05/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12494083	GROSS, JOHN NICHOLAS
	Examiner	**Art Unit**
	BEEMNET DADA	2435

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
726	5	G	0	6	F	7 / 04 (2006.01.01)						

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	14	
/BEEMNET DADA/ Primary Examiner.Art Unit 2435	02/05/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12494083	GROSS, JOHN NICHOLAS
	Examiner	**Art Unit**
	BEEMNET DADA	2435

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 14	
/BEEMNET DADA/ Primary Examiner.Art Unit 2435 (Primary Examiner)	02/05/2014 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATION OF:	CONFIRMATION NO. 1550
John Nicholas Gross	DOCKET: JNG 2009-6
APPLICATION NO.: 12/494,083	EXAMINER: DADA, B.
FILING DATE: June 29, 2009	ART UNIT: 2435

TITLE: METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS (AS AMENDED)

OK TO ENTER: /BD/ * * *

AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.116

MAIL STOP AF
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the final Office Action mailed October 31, 2013, please enter and consider the following amendments and remarks.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	John Nicholas Gross
	Art Unit	2435
	Examiner Name	Dada, B.
	Attorney Docket Number	JNG 2009-6

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7679604		2010-03-16	Uhlik et al.	

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BD/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	John Nicholas Gross
	Art Unit	2435
	Examiner Name	Dada, B.
	Attorney Docket Number	JNG 2009-6

	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/Beemnet Dada/	Date Considered	02/05/2014

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BD/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	John Nicholas Gross
	Art Unit	2435
	Examiner Name	Dada, B.
	Attorney Docket Number	JNG 2009-6

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew McAleavey/	Date (YYYY-MM-DD)	2013-11-15
Name/Print	Andrew McAleavey	Registration Number	50535

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BD/

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12494083	GROSS, JOHN NICHOLAS
	Examiner	Art Unit
	BEEMNET DADA	2435

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
726	3-5, 17, 21	2/5/2014	BD

SEARCH NOTES		
Search Notes	Date	Examiner
East search	2/5/2014	BD
NPL search	2/5/2014	BD
Inventor name search	2/5/2014	BD

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	see search report	2/5/2014	BD

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Suite 202A
EMERYVILLE, CA 94608

Courtesy Reminder for
Application Serial No: 12/494,083

Attorney Docket No: JNG 2009-6
Customer Number: 52447
Date of Electronic Notification: 02/12/2014

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:
ANDREW@PATENTBEST.COM
patent@patentbest.com

To view your correspondence online or update your email addresses, please visit us anytime at **https://sportal.uspto.gov/secure/myportal/privatepair.** If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov or call 1-866-217-9197.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/494,083	06/29/2009	2435	624	JNG 2009-6	22	4

CONFIRMATION NO. 1550

CORRECTED FILING RECEIPT

52447
PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

OC00000067199445

Date Mailed: 03/18/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

JOHN NICHOLAS GROSS, BERKELEY, CA;

Applicant(s)

JOHN NICHOLAS GROSS, BERKELEY, CA;

Power of Attorney: The patent practitioners associated with Customer Number 52447

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/076,495 06/27/2008

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 07/08/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/494,083**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****

Title

METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS

Preliminary Class

726

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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52447 7590 02/12/2014
PATENTBEST
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Suite 202A
EMERYVILLE, CA 94608

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6	1550

TITLE OF INVENTION: PROGRESSIVE PICTORIAL & MOTION BASED CAPTCHAS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	05/12/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
DADA, BEEMNET W	2435	726-005000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 PatentBest
2 Andrew McAleavey
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: John Nicholas and Kristin Gross Trust U/A/D April 13, 2010

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Berkeley, CA

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

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- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Andrew McAleavey/ Date April 29, 2014

Typed or printed name Andrew McAleavey Registration No. 50,535

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	12494083
Filing Date:	29-Jun-2009
Title of Invention:	METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Filer:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480
Publ. Fee- Early, Voluntary, or Normal	1504	1	0	0

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**480**

Electronic Acknowledgement Receipt	
EFS ID:	18889541
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey
Filer Authorized By:	
Attorney Docket Number:	JNG 2009-6
Receipt Date:	29-APR-2014
Filing Date:	29-JUN-2009
Time Stamp:	14:06:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$480
RAM confirmation Number	365
Deposit Account	
Authorized User	

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	IFTransmittal.pdf	91383 6ab1a77c8b41df8221a229d76c323ca001e614fe	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32099 0ae97a7e1a2ea4e5d90fb0e96e3dd3245f7ea9ed	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	123482		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Change(s) applied
to document,
/L.A.S./
4/18/2014

Progressive Pictorial & Motion Based CAPTCHAs

RELATED APPLICATION DATA

The present application claims the benefit under 35 U.S.C. 119(e) of the priority date of Provisional Application Serial no. 61076495 filed June 27, 2008 which is hereby incorporated by reference. The application is further related to the following applications, all of which are filed on this same date and incorporated by reference herein:

Pictorial Game System & Method; serial no. 12/494,013 ~~(attorney docket number 2009-4)~~

Internet Based Pictorial Game System & Method; serial no. 12/494,065 ~~(attorney docket number 2009-5)~~

FIELD OF THE INVENTION

The present invention relates to challenge systems which include pictorial and/or motion features.

BACKGROUND

A popular board game introduced many years ago goes by the name of Pictionary™. In this game teams of players compete against each other by having one member of the team manually draw an object (which could be a person, place, thing, action, etc.) while the other members of the team attempt to guess the identity of the object. A time factor is also accounted for in that the team must determine the object within a certain time period.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12494083
	Filing Date	2009-06-29
	First Named Inventor	Gross, John Nicholas
	Art Unit	2435
	Examiner Name	Dada, Beemnet
	Attorney Docket Number	JNG 2009-6

	8	20050105712		2005-05-19	Williams et al.	
	9	20050071163		2005-03-31	Aaron et al.	
	10	20040249628		2004-12-09	Chelba et al.	
	11	20040102975		2004-05-27	Eide	
	12	20080072293		2008-03-20	D'Urso	
	13	20050114705		2005-05-26	Reshef et al.	
	14	20030125944		~~2005-12-20~~ 07/2003	Wohlsen et al.	
	15	20050185847		~~2008-03-25~~ 08/2005	Rowe	
	16	20090204819		2009-08-13	Parker	
	17	20090241174		2009-09-24	Rajan et al.	
	18	20090249476		2009-10-01	Seacat	

Change(s) applied to document, /C.C.B./ 4/26/2014

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BD/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/494,083	06/10/2014	8752141	JNG 2009-6	1550

52447 7590 05/21/2014

PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 1365 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

JOHN NICHOLAS GROSS, BERKELEY, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATIONS OF:
John Nicholas Gross

* * *

STATEMENT UNDER 37 C.F.R. § 3.73(b) AND POWER OF ATTORNEY

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The John Nicholas and Kristin Gross Trust U/A/D April 13, 2010 ("the Trust"), states that it is the owner of the entire right, title, and interest in the patent applications identified below by virtue of assignments from the inventor(s) which were recorded in the assignment records of the U.S. Patent and Trademark Office on Reel 025204, at Frame 0115 on October 27, 2010.

As the assignee of the following patent applications, the Trust hereby revokes all prior powers of attorney and authorizations of agent and appoints the practitioners associated with **Customer Number 23694** as its attorney(s) and/or agent(s) to prosecute the patent applications identified below and to transact all business in the United States Patent and Trademark Office connected therewith. This Power of Attorney pertains to:

1. U.S. Provisional Patent Application No. 61/043,363, filed April 8, 2008 and given docket no. JNG 2008P-1.
2. U.S. Provisional Patent Application No. 61/074,979, filed June 23, 2008 and given docket no. JNG 2008-2P.
3. U.S. Provisional Patent Application No. 61/076,495, filed June 27, 2008 and given docket no. JNG 2008-3P.
4. U.S. Patent Application No. 12/484,800, filed June 15, 2009 and given docket no. JNG 2009-1.
5. U.S. Patent Application No. 12/484,837, filed June 15, 2009 and given docket no. JNG 2009-2.

6. U.S. Patent Application No. 12/484,870, filed June 15, 2009 and given docket no. JNG 2009-3.
7. U.S. Patent Application No. 12/494,013, filed June 29, 2009 and given docket no. JNG 2009-4.
8. U.S. Patent Application No. 12/494,065, filed June 29, 2009 and given docket no. JNG 2009-5.
9. U.S. Patent Application No. 12/494,083, filed June 29, 2009 and given docket no. JNG 2009-6.
10. U.S. Patent Application No. 12/335,247, filed December 15, 2008 and given docket no. JNG 2008-10.
11. U.S. Patent Application No. 13/193,847, filed July 29, 2011 and given docket no. JNG 2008-10C1. (A continuation of Application No. 12/335,247.)
12. U.S. Patent Application No. 13/651,279, filed October 12, 2012 and given docket no. JNG 2008-10C2. (A continuation of Application No. 12/335,247.)
13. U.S. Patent Application No. 13/651,171, filed October 12, 2012 and given docket no. JNG 2008-10DIV1. (A divisional of Application No. 12/335,247.)
14. U.S. Patent Application No. 13/651,197, filed October 12, 2012 and given docket no. JNG 2008-10DIV2. (A divisional of Application No. 12/335,247.)
15. U.S. Patent Application No. 13/651,229, filed October 12, 2012 and given docket no. JNG 2008-10DIV3. (A divisional of Application No. 12/335,247.)
16. U.S. Patent Application No. 13/651,243, filed October 12, 2012, and given docket no. JNG 2008-10DIV4. (A divisional of Application No. 12/335,247.)
17. U.S. Patent Application No. 13/651,254, filed October 12, 2012 and given docket no. JNG 2008-10DIV5. (A divisional of Application No. 12/335,247.)
18. U.S. Patent Application No. 13/651,267, filed October 12, 2012 and given docket no. JNG 2008-10DIV6. (A divisional of Application No. 12/335,247.)

Please direct all correspondence in the above-identified patent applications to the correspondence address associated with **Customer No. 23694**. The undersigned is authorized to sign and act on behalf of the Trust in this matter.

Respectfully submitted,

Date: 12/22/2016

By: /J. Nicholas Gross/

J. Nicholas Gross
Trustee

Electronic Acknowledgement Receipt	
EFS ID:	27886558
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Christopher Dobel
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	22-DEC-2016
Filing Date:	29-JUN-2009
Time Stamp:	17:42:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	PoAand373-rev.pdf	72039 e05153e71e821eaf5c96e3422affa2962bb3e097	no	3
Warnings:					

Information:	
Total Files Size (in bytes):	72039

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT APPLICATIONS OF:
John Nicholas Gross

* * *

STATEMENT UNDER 37 C.F.R. § 3.73(b) AND POWER OF ATTORNEY

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The John Nicholas and Kristin Gross Trust U/A/D April 13, 2010 ("the Trust"), states that it is the owner of the entire right, title, and interest in the patent applications identified below by virtue of assignments from the inventor(s) which were recorded in the assignment records of the U.S. Patent and Trademark Office on Reel 025204, at Frame 0115 on October 27, 2010.

As the assignee of the following patent applications, the Trust hereby revokes all prior powers of attorney and authorizations of agent and appoints the practitioners associated with **Customer Number 23694** as its attorney(s) and/or agent(s) to prosecute the patent applications identified below and to transact all business in the United States Patent and Trademark Office connected therewith. This Power of Attorney pertains to:

1. U.S. Provisional Patent Application No. 61/043,363, filed April 8, 2008 and given docket no. JNG 2008P-1.
2. U.S. Provisional Patent Application No. 61/074,979, filed June 23, 2008 and given docket no. JNG 2008-2P.
3. U.S. Provisional Patent Application No. 61/076,495, filed June 27, 2008 and given docket no. JNG 2008-3P.
4. U.S. Patent Application No. 12/484,800, filed June 15, 2009 and given docket no. JNG 2009-1.
5. U.S. Patent Application No. 12/484,837, filed June 15, 2009 and given docket no. JNG 2009-2.

6. U.S. Patent Application No. 12/484,870, filed June 15, 2009 and given docket no. JNG 2009-3.
7. U.S. Patent Application No. 12/494,013, filed June 29, 2009 and given docket no. JNG 2009-4.
8. U.S. Patent Application No. 12/494,065, filed June 29, 2009 and given docket no. JNG 2009-5.
9. U.S. Patent Application No. 12/494,083, filed June 29, 2009 and given docket no. JNG 2009-6.
10. U.S. Patent Application No. 12/335,247, filed December 15, 2008 and given docket no. JNG 2008-10.
11. U.S. Patent Application No. 13/193,847, filed July 29, 2011 and given docket no. JNG 2008-10C1. (A continuation of Application No. 12/335,247.)
12. U.S. Patent Application No. 13/651,279, filed October 12, 2012 and given docket no. JNG 2008-10C2. (A continuation of Application No. 12/335,247.)
13. U.S. Patent Application No. 13/651,171, filed October 12, 2012 and given docket no. JNG 2008-10DIV1. (A divisional of Application No. 12/335,247.)
14. U.S. Patent Application No. 13/651,197, filed October 12, 2012 and given docket no. JNG 2008-10DIV2. (A divisional of Application No. 12/335,247.)
15. U.S. Patent Application No. 13/651,229, filed October 12, 2012 and given docket no. JNG 2008-10DIV3. (A divisional of Application No. 12/335,247.)
16. U.S. Patent Application No. 13/651,243, filed October 12, 2012, and given docket no. JNG 2008-10DIV4. (A divisional of Application No. 12/335,247.)
17. U.S. Patent Application No. 13/651,254, filed October 12, 2012 and given docket no. JNG 2008-10DIV5. (A divisional of Application No. 12/335,247.)
18. U.S. Patent Application No. 13/651,267, filed October 12, 2012 and given docket no. JNG 2008-10DIV6. (A divisional of Application No. 12/335,247.)

Please direct all correspondence in the above-identified patent applications to the correspondence address associated with **Customer No. 23694**. The undersigned is authorized to sign and act on behalf of the Trust in this matter.

Respectfully submitted,

Date: 12/22/2016

By: /J. Nicholas Gross/

J. Nicholas Gross
Trustee

Electronic Acknowledgement Receipt	
EFS ID:	27887253
Application Number:	12494083
International Application Number:	
Confirmation Number:	1550
Title of Invention:	METHODS FOR PRESENTING AND DETERMINING THE EFFICACY OF PROGRESSIVE PICTORIAL AND MOTION-BASED CAPTCHAS
First Named Inventor/Applicant Name:	JOHN NICHOLAS GROSS
Customer Number:	52447
Filer:	Andrew James McAleavey/Christopher Dobel
Filer Authorized By:	Andrew James McAleavey
Attorney Docket Number:	JNG 2009-6
Receipt Date:	22-DEC-2016
Filing Date:	29-JUN-2009
Time Stamp:	18:19:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	PoAand373-rev.pdf	72039 e05153e71e821eaf5c96e3422affa2962bb3e097	no	3
Warnings:					

Information:	
Total Files Size (in bytes):	72039

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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6

CONFIRMATION NO. 1550

23694
Law Office of J. Nicholas Gross, Prof. Corp.
PO BOX 9489
BERKELEY, CA 94709

POA ACCEPTANCE LETTER

OC000000088161199

Date Mailed: 01/03/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/22/2016.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/qtran/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/494,083	06/29/2009	JOHN NICHOLAS GROSS	JNG 2009-6

CONFIRMATION NO. 1550

52447
PATENTBEST
1195 Park Avenue
Suite 202A
EMERYVILLE, CA 94608

POWER OF ATTORNEY NOTICE

OC000000088161146

Date Mailed: 01/03/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/22/2016.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/qtran/

505820745 12/13/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5867575

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JOHN NICHOLAS AND KRISTIN GROSS TRUST U/A/D	11/07/2019

RECEIVING PARTY DATA

Name:	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
Street Address:	7215 BOSQUE BLVD., SUITE 150
City:	WACO
State/Country:	TEXAS
Postal Code:	76710

PROPERTY NUMBERS Total: 8

Property Type	Number
Patent Number:	8752141
Patent Number:	9186579
Patent Number:	9192861
Patent Number:	9266023
Patent Number:	9295917
Patent Number:	9474978
Patent Number:	9789394
Application Number:	61076495

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Email: ngross@hdintelligencellc.com
Correspondent Name: HUMAN DIFFERENTIAL INTELLIGENCE, LLC
Address Line 1: 7215 BOSQUE BLVD., SUITE 150
Address Line 4: WACO, TEXAS 76710

NAME OF SUBMITTER:	JOHN NICHOLAS GROSS
SIGNATURE:	/s/ John Nicholas Gross
DATE SIGNED:	12/13/2019
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4
source=2019.11.07 Exhibit B_Assignment of Patent Rights#page1.tif
source=2019.11.07 Exhibit B_Assignment of Patent Rights#page2.tif
source=2019.11.07 Exhibit B_Assignment of Patent Rights#page3.tif
source=2019.11.07 Exhibit B_Assignment of Patent Rights#page4.tif

Exhibit B

ASSIGNMENT OF PATENT RIGHTS

For good and valuable consideration, the receipt of which is hereby acknowledged, John Nicholas and Kristin Gross Trust U/A/D, a revocable trust formed under the laws of the State of California, having offices at 1215 Oxford St., Berkeley, California 94709 (**"*Assignor*"**), does hereby sell, assign, transfer, and convey unto Human Differential Intelligence, LLC, a Texas limited liability company, with an address at 7215 Bosque Blvd., Suite 150, Waco, Texas 76710 (**"*Assignee*"**), or its designees, all right, title, and interest that exist today and may exist in the future in and to any and all of the following (collectively, the **"*Patent Rights*"**):

(a) the patents listed in the table below (the "***Patents***");

(b) all patents and patent applications (i) to which any of the Patents directly or indirectly claims priority, and (ii) for which any of the Patents directly or indirectly forms a basis for priority;

(c) all reissues, reexaminations, extensions, continuations, continuations in part, continuing prosecution applications, requests for continuing examinations, divisions, registrations of any item in any of the foregoing categories (a) and (b);

(d) all foreign counterpart patents and foreign counterpart patent applications, that are related to any item in any of the foregoing categories (a) through (c), including, without limitation, certificates of invention, utility models, industrial design protection, design patent protection, and other governmental grants or issuances;

(e) all items in any of the foregoing in categories (b) through (d), whether or not expressly listed as Patents below and whether or not claims in any of the foregoing have been rejected, withdrawn, cancelled, or the like;

(f) all inventions, invention disclosures, and discoveries described in any item in any of the foregoing categories (a) through (e) and all other rights arising out of such inventions, invention disclosures, and discoveries;

(g) all rights to apply in any or all countries of the world for patents, certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type arising from any item in any of the foregoing categories (a) through (f), including, without limitation, under the Paris Convention for the Protection of Industrial Property, the International Patent Cooperation Treaty, or any other convention, treaty, agreement, or understanding;

(i) to the extent they exist, all causes of action (whether known or unknown or whether currently pending, filed, or otherwise) and other enforcement rights under, or on account of, any of the Patents and/or any item in any of the foregoing

categories (b) through (g), including, without limitation, all causes of action and other enforcement rights for damages,
(ii) injunctive relief, and
(iii) any other remedies of any kind for past, current, and future infringement; and all rights to collect royalties and other payments under or on account of any of the Patents and/or any item in any of the foregoing categories (b) through (h).

Patent Application No.	Filing Date	US Patent No.	Title	Inventor(s)
12/494,083	6/29/09	8,752,141	Methods for Presenting and Determining the Efficacy of Progressive Pictorial and Motion-Based CAPTCHAs	John Nicholas Gross
12/494,065	6/29/09	9,186,579	Internet Based Pictorial Game System and Method	John Nicholas Gross
14/223,848	3/24/14	9,192,861	Motion, Orientation, and Touch-Based CAPTCHAs	John Nicholas Gross
12/494,013	6/29/09	9,266,023	Pictorial Game System and Method	John Nicholas Gross
14/223,824	3/24/14	9,295,917	Progressive Pictorial and Motion Based CAPTCHAs	John Nicholas Gross
14/873,727	10/2/15	9,474,978	Internet Based Pictorial Game System and Method with Advertising	John Nicholas Gross
15/268,309	9/16/16	9,789,394	Methods for Using Simultaneous Speech Inputs to Determine An Electronic Competitive Challenge Winner	John Nicholas Gross
61/076,495	6/27/08	NA	Pictorial Game System And Method	John Nicholas Gross

Assignor represents, warrants and covenants that it owns all right, title, and interest to the Patent Rights, including, without limitation, all right, title, and interest to sue for infringement of the Patents. The Patent Rights are free and clear of all Liens. There are no actions, suits, investigations, claims, or proceedings threatened, pending, or in progress relating in any way to the Patent Rights. Assignor has the full power and authority, and has obtained all third party consents, approvals and/or other authorizations required to enter into this Agreement and to carry out its obligations hereunder, including the assignment of the Patent Rights to Assignee.

Assignor hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents, certificates of invention, utility models or other governmental grants or issuances that may be granted upon any of the Patent Rights in the name of Assignee, as the assignee to the entire interest therein

The terms and conditions of this Assignment of Patent Rights will inure to the benefit of Assignee, its successors, assigns, and other legal representatives and will be binding upon Assignor, its successors, assigns, and other legal representatives.

IN WITNESS WHEREOF this Assignment of Patent Rights is executed at Berkeley CA on November 7th 2019

ASSIGNOR:

John Nicholas and Kristin Gross Trust U/A/D April 13, 2010

By: _____

Name: John Nicholas Gross

Title: Trustee

(Signature MUST be notarized)

STATE OF California)
) ss.
COUNTY OF Alameda)

On 11/07/2014, before me, Wilson S. Quic Ortiz, Notary Public in and for said State, personally appeared Ethan Nicholas Gross personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature _____ (Seal)

WILSON S. QUIC-ORTIZ
COMM. # 2182624
NOTARY PUBLIC-CALIFORNIA
ALAMEDA COUNTY
My Comm. Exp. February 3, 2021

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court WESTERN DISTRICT OF TEXAS - WACO DIVISION on the following

☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00305	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	CIGNA CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court WESTERN DISTRICT OF TEXAS - WACO DIVISION on the following

☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00311	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	CVS HEALTH CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
3			
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court WESTERN DISTRICT OF TEXAS - WACO DIVISION on the following

☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00307	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	THE GAP, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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AO 120 (Rev. 08/10)

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☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00310	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	BED BATH & BEYOND, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
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DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court WESTERN DISTRICT OF TEXAS - WACO DIVISION on the following

☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00305	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	CIGNA CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
1/6/2021 ORDER GRANTING Motion to Dismiss (document 49)

CLERK	(BY) DEPUTY CLERK	DATE
Philip J. Devlin	J. Rivera	07/08/2022

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court WESTERN DISTRICT OF TEXAS - WACO DIVISION on the following

☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00307	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	THE GAP, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
1/6/2021 ORDER GRANTING Motion to Dismiss (document 37)

CLERK	(BY) DEPUTY CLERK	DATE
Philip J. Devlin		07/08/2022

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

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☐ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:20-cv-00310	4/22/2020	WESTERN DISTRICT OF TEXAS - WACO DIVISION

PLAINTIFF	DEFENDANT
HUMAN DIFFERENTIAL INTELLIGENCE LLC,	BED BATH & BEYOND, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,752,141	6/10/2014	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
2	9,192,861	11/24/2015	HUMAN DIFFERENTIAL INTELLIGENCE, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
1/6/2021 ORDER GRANTING Motion to Dismiss (document 44)

CLERK	(BY) DEPUTY CLERK	DATE
Philip J. Devlin	L. Rivera	07/08/2022

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Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy