**2021 PLI Advanced Patent Prosecution Workshop**

Electronics/Computer Section

Classroom Problems

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Consider the following claim:

A system for reproducing a color original in a medium using a selected multiplicity of reproduction colorants, the system comprising:

 a **scanner** for producing from the color original a set of three appearance signals dependent on the colors in the original;

 **display means** connected to the scanner for receiving the appearance signals and **aesthetic correction circuitry** for interactively introducing aesthetically desired alterations into the appearance signals to produce modified appearance signals; and

 **colorant selection mechanism** for receiving the modified appearance signals and for selecting corresponding reproduction signals representing values of the reproduction colorants to produce in the medium a color-matched reproduction.

QUESTION:

Are the limitations set off in bold type “means-plus-function” limitations under 35 U.S.C. § 112(f)?

Review the following claims to determine which recite patent-eligible subject matter under the 2-part test set forth in the Supreme Court’s decision in *CLS v Alice* and the 2019 USPTO Guidance.

1. Catheter Navigation System

 A method of registering a catheter navigation system to a three-dimensional image, comprising:

* 1. obtaining a three-dimensional image of at least a portion of a heart, the three-dimensional image including position information for a plurality of location points on a surface of the heart measured relative to a coordinate frame *Y;*
	2. placing a tool on a surface location *Xi* of the heart;

 c) measuring position information for the surface location *Xi* relative to a coordinate frame *X;*

 d) identifying a corresponding location *Yi* on the three­ dimensional image;

 e) associating the position information for the surface location *Xi* as measured by the catheter navigation system relative to coordinate frame *X* with position information for the corresponding location *Yi* on the three-dimensional image relative to coordinate frame Y as a fiducial pair *(Xi, Yi);* and

 f) using at least two fiducial pairs *(Xi, Yi*) to generate a mapping function *f* that transforms points within coordinate frame *X* to coordinate frame *Y* such that, for each fiducial pair *(Xi, Yi)*, an error function f(*Xi*)- *Yi =* 0, wherein the step of using at least two fiducial pairs to generate a mapping function comprises:

 using a thin plate splines algorithm to generate the mapping function,

 wherein the thin plate splines algorithm comprises summing a fixed number of weighted basis functions,

 wherein the fixed number of weighted basis functions is the same as a number of fiducial pairs that were associated, and

 wherein the mapping function compensates for inhomogeneities in the catheter navigation system such that, for each fiducial pair *(Xi, Yi),* the error function *f*(*Xi*) - *Yi =* 0.

1. Method of Manufacturing a Driveshaft

A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

providing a hollow shaft member;

tuning at least one liner to attenuate at least two types of vibration transmitted through the shaft member; and

positioning the at least one liner within the shaft member such that the at least one liner is configured to damp shell mode vibrations in the shaft member by an amount that is greater than or equal to about 2%, and the at least one liner is also configured to damp bending mode vibrations in the shaft member, the at least one liner being tuned to within about ±20% of a bending mode natural frequency of the shaft assembly as installed in the driveline system.

1. Magnetic Resonance Tomography Apparatus

A magnetic resonance (MR) tomography apparatus

comprising:

an MR data acquisition unit comprising a radio frequency (RF) transmission system comprising a number n of

single RF coils Ei with which reception signals Ii  are respectively acquired, with i = 1, ... , n;

a processor provided with or configured to determine, for each single coil Ei, an individual reception sensitivity profile in the spatial domain r Bli-(r): Bli-(r) = |ai(r)| \* eiφi(r)

with amplitude ai(r) and phase φi(r);

said processor being configured to operate the MR tomography apparatus to scan an examination subject introduced into the MR tomography apparatus to acquire reception signals Ii(k) in the frequency domain with wave number k via the n reception coils Ei;

said processor being configured to determine Fourier­ transformed signals IFi (r) from the reception signals Ii(k), wherein:

IFi (r) = ρ(r) · eiΦ(r) · Bli-(r)+ N

with N:= noise term, ρ(r) eiΦ(r) := proton density;

said processor being configured to determine complexly corrected signals IFi(r) on the basis of the signals IFi(r) and the individual reception sensitivity profiles Bli-(r);

said processor being configured to determine a sum signal MR(r) via complex addition of the corrected signals IFi(r):

MR(r) = Σ IFi (r); and

 i

said processor being configured to reconstruct image data of the examination subject on the basis of the sum signal MR(r), and to make the image data available at an output of the processor as an electronic data file.

4. Method for Creating Life Cycle Workflow for a Project

A method for creating a life cycle workflow for a project comprising:

creating one or more identifiable workflow stages for the project on a server computer, each of the one or more workflow stages corresponding to a specific sequence of workflow activities, wherein the creating further comprises using a workflow stage identifier as a property of the specific sequence of workflow activities for each of the one or more workflow stages;

creating one or more identifiable workflow phases for the project on the server computer, each workflow phase includes one or more corresponding workflow stages;

creating one or more project detail pages on the server computer, each project detail page being a web page that is made visible during a corresponding workflow stage;

when a workflow stage is created, associating a workflow phase with the workflow stage, the workflow phase being selected from the one or more workflow phases on the server computer; and

when the workflow stage is created, associating one or more project detail pages for the workflow stage.

This problem describes a continuation-in-part application that is currently rejected by an examiner. The problem refers to a ‘488 patent and a ‘466 patent. The ‘488 patent is the parent application to which the CIP application claims priority. The ‘466 patent is the prior art relied on by the examiner to reject the CIP application.

The ‘488 patent includes in its specification:

It has been unexpectedly discovered that floss made of porous, high strength expanded polytetrafluoroethylene (PTFE) is extremely effective to provide hygienic tooth and gum care. Moreover, excellent effect is also provided when the floss is coated with microcrystalline wax (MCW). The MCW, surprisingly, adheres to the porous, high strength PTFE which without a coating has a very low COF (coefficient of friction)…and when coated with MCW generally has a COF intermediate between prior art floss white and uncoated PTFE…

Only MCW is disclosed as a suitable friction enhancing coating for a PTFE dental floss. The primary object of the invention is "to provide a floss for dental and gingival cleaning made of porous, high strength PTFE…coated with MCW." Additional objects of the invention incorporate various substances into a PTFE dental floss such as actives which promote oral hygiene, coagulants that inhibit gingival bleeding, and other acceptable agents such as coolants, flavorants, colorants, and polishing and abrasive agents. In each instance, the disclosure states these substances are incorporated on or in an MCW coating.

A continuation-in-part application, claiming priority to the above patent, includes in it’s specification:

It has been found that PTFE floss can be coated or otherwise treated with a friction coating, such as a wax, to increase the coefficient of friction to a level where the floss is easier to handle and does not slip through the fingers of the user as easily as the untreated floss. It has further been found that the thinner PTFE flosses…that are coated with a friction enhancing coating are easy to handle and comfortable to use.

This genus of "friction enhancing coatings" is comprised of materials that adhere well to PTFE and that increase the COF of a PTFE dental floss to about 0.08 or greater. Water soluble coatings such as polyvinyl alcohol or polyethyleneoxide are suitable alternative friction enhancing coatings.

Claims are directed to a dental floss made from at least one PTFE strand having a coating of at least one material capable of increasing the coefficient of friction.

The examiner rejects the patent application as anticipated by patent ‘466. The applicant attempts to claim the benefit of the filing date of the application for the ‘488 patent, which removes patent ‘466 as prior art. The matter is appealed to the Board of Patent Appeals and Interferences. What should the Board rule?

Patentee acquired a patent on a “Method and Apparatus for Controlling the Distribution of Coupons”. The system comprises the arrangement depicted in FIG. 1.

FIG. 1

Among the claims that issued in the patent was claim 1 listed below:

 A system for controlling the selection and dispensing of product coupons at a plurality of remote terminals located at pre-designated sites such as consumer stores wherein each terminal comprises:

 activation means for activating such terminal for consumer transactions;

display means operatively connected with said activation means for displaying a plurality of coupons available for selection;

 selection means operatively connected with said display means provided to permit selection of a desired displayed coupon by the consumer;

 print means operatively connected with said selection means for printing and dispensing the coupon selected by the consumer; and

 control means operatively connected with said display means for monitoring each consumer transaction and for controlling said display means to prevent the display of coupons having exceeded prescribed coupon limits.

 In the course of prosecution, the examiner rejected all claims over art describing an airline ticketing system. Applicants made certain limitations to the body of claim 1 but did not specifically amend the claim with regard to the language of the location of the terminals. Applicants noted that their invention involved terminals located in retail stores, but they did not argue that the location of the terminals distinguished the invention over the cited art.

 Patentee brought suit on claim 1 against a defendant who offers an on-line coupon system whereby patrons download selected coupons from a web site. In construing the claim 1, the District Court held that the claim required that the terminals be located at pre-designated sites such as consumer stores. Accordingly, the District Court granted summary judgment of non-infringement.

DID THE COURT CORRECTLY CONSTRUE CLAIM 1?

Pat Attorney is asked to prepare and file a patent application directed to a method for transmitting audio data and video data for real-time audio/video communication. Lynn Ventor describes her invention as utilizing encoding method A for compressing the audio data on a block-by-block basis and encoding method V for compressing the video data on a block-by-block basis. Lynn Ventor also describes a multiplexing method for multiplexing a block of encoded audio data with a corresponding block of encoded video data and transmitting the multiplexed data to a receiver. Multiplexed data representing the encoded blocks are sequentially transmitted or streamed to the receiver. The receiver separates the multiplexed data and decodes the encoded audio data and the encoded video data on a block-by-block basis, and outputs a signal to a videophone.

Pat Attorney prepares an enabling disclosure that includes the following statements:

Encoder 100 receives a signal with audio data and video data and divides the received signal into units of blocks. For each block, the audio data is compressed or encoded according to encoding method A, and the video data is compressed or encoded according to encoding method V. Although encoding method A and encoding method V are preferred techniques for encoding the audio data and the video data, respectively, other encoding methods may be used. For example, encoding methods B, C, and D may be used to encode the audio data, and encoding methods W, X, and Y may be used to encode the video data.

In order to obtain a quick allowance, Pat Attorney filed a single claim directed to the preferred embodiment:

A method of transmitting audio data and video data in real time, comprising the steps of:

 dividing an input signal into units of blocks;

 for each block, encoding audio data included in the block according to encoding method A and encoding video data included in the block according to encoding method V;

 for each block, multiplexing the encoded audio data and the encoded video data; and

 transmitting the multiplexed data to a receiver.

The claim was allowed in the first Office Action, and U.S. Patent No. 9,876,543 issued.

QUESTION:

Topcopy, a startup communication company, provides a communication service that multiplexes and transmits encoded audio data and encoded video data on a block-by-block basis. Topcopy uses encoding method B to encode audio data and encoding method Y to encode video data. Lynn Ventor wants to sue Topcopy.

What should Pat Attorney advise? What could Pat Attorney have done differently?

Consider the following claim:

37. A system for monitoring supply chain activity comprising a plurality of supply chain sites, comprising:

*means for monitoring changed supply-related data at independent supply chain sites within the supply chain;*

means for extracting, at each supply chain site, the supply-related data to be monitored, wherein the data is maintained in plural formats located among the supply chain sites, at least one of the supply chain sites corresponding to an independent entity in the supply chain, being independent of another supply chain site;

means for translating the data to a common format;

means for uploading and collecting, from each supply chain site, the extracted data to a data collection site;

*means for formatting, at the data collection site, a portion of the collected data, retrieved from at least one of the supply chain sites other than the site of the user, into one of a plurality of views, responsive to criteria selected by a user associated with a supply chain site, for presentation to the user, the portion of formatted data being dependent on access rights granted to the user's supply chain site;*

means for publishing the formatted data view to the user's supply chain site;

means for monitoring, at the data collection site, inbound data from multiple supply chain sites;

means for detecting a problem condition if there is a supply chain surplus or shortage detected in the collected data retrieved from at least one of the supply chain sites other than the site of the user; and

means for responding to the problem condition by asserting an alert, where the alert indicates a problem condition associated with at least one of the supply chain sites other than the site of the user.

The detailed description for the term “means for monitoring changed supply-related data at independent supply chain sites within the supply chain,” contains description such as: the DTE “monitors the local system continuously, and takes whatever information is available,” (patent, col.1, ll.64–66); “[i]n one embodiment, the DTE looks for changes to data and uploads new data to the data collection site ... upon finding a change,” (id. at col.5, ll.62–64); “[t]he DTE takes data in any size or format, including various databases 24 and/or spreadsheets 22 [numbers from the flowcharts] and/or text files such as ASCII files, and corrects, translates and formats the data into ‘clean’ data,” (id. at col.5, ll.59–64); “[t]his process ... can be performed regularly, upon the expiration of the predetermined time period or, for example, when a change in the data is detected at the supply chain site,” (id. at col.6, ll.44–48).

Furthermore, the detailed description for the term “means for formatting,” states that “[a] publisher 36 receives query requests form the various sites 19” and “formats and publishes the relevant supply-chain data to the requesting site,” (id. at col.6, ll.18–23), The detailed description also describes several ways by which the publisher performs this function, “An analysis report is generated responsive to report selection by a user. The generated report is provided, responsive to user selection of report destinations, by emailing, printing, storing as a file or displaying on a monitor or a screen, the report.” (Id. at col.3, ll.35–39); “A selected report can be sent to the screen, to a printer, to a file, or to a person via email, by selecting the respective button 272, 274, 280, 286.” (id. at col.10, ll.59–67, referring to the flowchart). The patent explains that the formatting depends on the selection of the user, “Data is displayed in a window at a site's display according to a category selected by a user at the site ...”(id at col.3, ll.40–42). The patent includes specific illustrations of formatting, such as:

“From page” and “To” fields 276, 278 allow the printing of only selected pages. File Name and File Type fields 284, 288 allow the designated report to be named and saved in a variety of formats. To, cc:, Subject and message fields, 288, 290, 292 and 294 respectively, allow the user to specify recipients of the report, and to add a subject and remarks. (Id. at col. 10, ll.59–67.)

The patent also presents screen shots of formatted data.

QUESTION:

Is the disclosure adequate under 35 U.S.C. § 112 to support the two italicized clauses of the claim?

Consider the following claim:

Claim 1: An electronic cat toy, comprising:

a motion sensor system that outputs a detection signal in response to sensed movement of a cat in a room;

a controller configured to receive the detection signal and to output a control signal; and

an electronic bird configured to receive the control signal and to simulate bird movements and bird sounds in response to the control signal.

The electronic cat toy is intended to be used by owners of indoor or house cats, to amuse their cats while the owners are away.

In a first Office Action, the examiner rejected Claim 1 under 35 U.S.C. 103 as being unpatentable over a combination of two prior-art publications.

The first publication is U.S. Patent A, which discloses a home security system with a motion detector that sends signals to a control center when motion is detected.

The second publication is an article in a trade journal about an electronic cuckoo clock.

The examiner stated that, using basic knowledge and common sense, it would have been obvious for a person of ordinary skill in the art to modify the electronic cuckoo clock so that it can be remotely controlled using a motion sensor and a controller, as taught by U.S. Patent A, in order to produce a toy for amusing a cat.

What types of arguments can the applicant make against the rejection?

 The claims at issue required that the inventive pump include a “non-volute pump chamber”. [A chamber having a narrowing cross section in the direction of the pump outlet.]

 The claims at issue were never narrowed to include this limitation. The non-volute pump chamber limitation appeared in the original version of the asserted claims. However, the non-volute pump chamber limitation was added to one of the non-asserted claims of the patent in order to overcome a prior art rejection.

QUESTION:

 Did the narrowing of the non-asserted claim create a Festo estoppel with respect to the same limitation contained in the asserted claims?

On August 10, 2012, Inventor A developed an apparatus to harness dark energy to produce an anti-gravitational effect. On September 15, 2012, she published a paper describing how dark energy could be harnessed but did not describe the particular apparatus. Inventor B, working in China, filed a PCT application on March 1, 2013 for a dark energy anti-gravitational apparatus. Inventor A filed a U.S. patent application claiming her apparatus on April 1, 2013.

1. Can Inventor B’s application be prior art against Inventor A’s application?
2. Would the result change if Inventor A published a description of her invention instead of a description of the concept of harnessing dark energy?
3. Would the result in 1) or 2) change if Inventor A filed her U.S. patent application on March 15, 2013?
4. Inventor A’s invention includes elements A, B, C and D. Her paper disclosed only elements A and B. Inventor B’s application includes elements A, B, C and E. What elements of B’s application may be cited as prior art against A’s patent application?
5. A can prove that B attended the seminar in which she presented her paper. How should she proceed if B’s PCT application is cited against her patent application.
6. Would the result change in 1) or 2) if the initial paper was presented by A’s supervisor based on work done by A.
7. At filing, A assigned her invention to Colossal Corp. and B works for Tiny Corp., a wholly-owned subsidiary of Colossal Corp., but did not assign his invention to Tiny Corp. until after A’s filing date. Can A remove B’s patent as prior art? If so, how?

The patent examiner has rejected all claims (1-3) of a patent application filed on January 1, 2016 as being anticipated by the Smith patent publication, which published July 1, 2017. The patent application leading to the Smith patent publication was filed on December 26, 2016 as a continuation application of a patent application filed February 1, 2016, which published on August 1, 2016, and which, in turn, claims priority to a Smith provisional patent application filed on February 1, 2015.

The July 1, 2017 Smith patent publication appears to disclose all features of all claims (1-3) of the patent application filed on January 1, 2016.

The Smith patent publication which published on August 1, 2016 appears to disclose all features of claims 1 and 2 of the patent application filed on January 1, 2016.

The Smith provisional patent application filed on February 1, 2015 does NOT anticipate any of the claims of the patent application filed on January 1, 2016.

The Smith provisional patent application filed on February 1, 2015 generally discloses the subject matter that is recited in claim 1 of the Smith patent publication which published on August 1, 2016 but does not disclose the subject matter claimed in any of the claims of the July 1, 2017 Smith patent publication.

QUESTION:

Given these facts, may the examiner maintain the rejection of any of the claims of the January 1, 2016 patent application over the July 1, 2017 Smith patent publication? If so, which claims and on what basis? If not, why not?

Claim 18 reads as follows:

18. A method for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in the electronic mail system comprising:

 transmitting the originated information originating from the one of the plurality of originating processors to a gateway switch within the electronic mail system;

  transmitting the originated information from the gateway switch to an interface switch;

  transmitting the originated information received from the gateway switch from the interface switch to a RF information transmission network;

  transmitting the originated information by using the RF information transmission network to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors; and

  transmitting other originated information with the electronic mail system from one of the plurality originating processors in the electronic mail system to at least one of the plurality of destination processors in the electronic mail system through a wireline without transmission using the RF information transmission network…

The hardware components that perform the transmitting steps in this claim are: an originating processor, a gateway switch, an interface switch, an RF information transmission network, and at least one RF receiver. Defendant’s accused process reads on each of the elements of Claim 18, but the defendant’s interface switch is located outside the U.S. Does the accused process infringe on Claim 18? If it does not infringe, how would you change this claim so that it would be infringed by the defendant?

Ann Ventor has been working to develop an artificial intelligence system that captures video images of a user performing preset tasks. From these images, the system estimates the user’s fitness level and flexibility to automatically generate a sequence of yoga poses. The system then monitors the user’s performance while executing the yoga poses and modifies the sequence appropriately. On January 10, 2015, while at CES, Ann disclosed elements A, B and C of her invention to her colleague Len Stoll. To ensure that Len did not further disclose her invention, she had him sign the following statement, “I Len Stoll agree to keep the information disclosed to me by Ann Ventor at the 2015 Consumer Electronics Show.

Unbeknownst to Ann, Len was interviewed by a newspaper journalist on February 15, 2015 and, during the interview, disclosed elements A, B and C of Ann’s invention as well as element D which he added. Unbeknownst to Ann or Len, Trip Arty, independently developed a similar system, including elements A, B, E and F and began marketing it on the Internet on March 10, 2015.

Ann completed her invention and filed a patent application on December 10, 2015. The application claims elements A, B, C and E. During prosecution, the examiner cited Len’s article and a webpage describing Trip’s system against Ann’s application.

Can Ann remove the newspaper article and/or Trip’s public sale as prior art references? If so, outline the steps she would need to take.