Paper No. __

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

GOOGLE LLC, LG ELECTRONICS INC., and
LG ELECTRONICS U.S.A, INC.,
Petitioners,

v.

BOCCONE, LLC,
Patent Owner.

_____

Case No. TBD
Patent No. 10,027,726

_____

PETITION FOR INTER PARTES REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.1 et seq.

TABLE OF CONTENTS

TABLE OF AUTHORITIES

CASES

STATUTES

REGULATIONS

APPENDIX LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 10,027,726 ("the '726 patent")
1002	File History for U.S. Patent No. 10,027,726 ("the '726 FH")
1003	Declaration of Matthew A. Turk, Ph.D. ("Turk")
1004	Curriculum Vitae of Matthew A. Turk, Ph.D. ("Turk CV")
1005	U.S. Publication No. 2011/0148857 ("Krupka")
1006	U.S. Patent No. 7,783,085 ("Perlmutter")
1007	U.S. Patent No. 8,798,401 ("Johnson")
1008	U.S. Patent App. No. 14/582,946 ("the '946 Application")
1009	Boccone's First Set of Infringement Contentions
1010	U.S. Patent No. 8,341,219 ("Young")
1011	U.S. Patent No. 7,809,722 ("Gokturk")
1012	U.S. Patent No. 9,256,620 ("Amacker")
1013	U.S. Patent No. 9,928,407 ("Ganong")
1014	Girgenshohn et al. (2003) "Simplifying the management of large photo collections," Proc. INTERACT 2003, pp. 196-203.
1015	*The Concise Oxford English Dictionary* (12th Ed. 2011) ("Concise Oxford")
1016	*Newton's Telecom Dictionary* (18th Ed. 2002) ("Newton's Telecom")
1017	*Boccone, LLC v. LG Elecs., Inc. et al.* Scheduling Order
1018	*Boccone, LLC v. Samsung Elecs. Co. Ltd. et al.* Scheduling Order
1019	*Boccone, LLC v. LG Elecs., Inc. et al.* Docket
1020	*Boccone, LLC v. Samsung Elecs. Co. Ltd. et al.* Docket

I. INTRODUCTION

U.S. Patent No. 10,026,726 ("the '726 patent," Ex. 1001) relates to sharing/receiving media (e.g., images or video) and associated metadata, including "face recognition information" about a face in this media that is extracted using a "facial recognition learning process." Ex. 1001, 6:66-7:31; 12:59-13:7. The '726 patent describes the familiar use of face recognition information, either created by a user or made accessible by another, to allow the user to identify a particular person's face in an image and have the system find and share other images including that same face. *Id.*, 12:4-13, 69:34-39.

The challenged claims relate to computer-implemented techniques for using "face recognition information" to find and share images. Claim 1, for example, recites a device with conventional computer components executing software that accomplishes two largely independent tasks: (1) display a first set of images the device recognizes (e.g., using face recognition information generated on the device) as containing a first face selected by the user, and (2) display/share a second set of images recognized as containing a second face using "face recognition information" received from a different device. Declaration of Matthew Turk ("Turk," Ex. 1003) ¶¶ 50-53. The dependent claims recite additional conventional options for displaying, selecting, and sharing images in connection with these tasks. *Id*.

The Patent Office correctly found the limitations concerning the use of facial recognition information to find, display, and share images well-known before the '726 patent was filed. Ex. 1002, 242. The Patent Office, however, was mistaken when it found limitations related to ***receiving*** facial recognition information from another device inventive. Turk ¶¶ 66-68.

For example, Krupka (Ex. 1005), which was not cited during prosecution, discloses methods for sharing "face recognition information"—called "face models" in Krupka—between users to find and share photos of any person for which a face model has been shared. Krupka, [0064]. Krupka's "face models" are used and shared in the same way "face recognition information" is used and shared in the '726 patent. Turk ¶ 68.

The challenged claims recite basic photo finding and sharing techniques using face recognition that were common in the prior art. The challenged claims would have been obvious to a POSA over Krupka and Perlmutter (Ex. 1006) in view of Krupka.

II. MANDATORY NOTICES

A. Real Parties-In-Interest

Google LLC, LG Electronics Inc., and LG Electronics U.S.A., Inc. (collectively, "Petitioners") are Real Parties-in-Interest. Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. are also Real Parties-in-Interest.

Boccone, LLC purports to be the Patent Owner, but based on publicly available materials, other entities may also be the Patent Owner or real parties-in-interest in the outcome of this petition. Boccone, LLC is a Delaware LLC, whose Certificate of Formation was signed by Andrew Gordon. However, Boccone is merely a shell entity company that is affiliated with and managed by other entities, including Oso-IP, which is managed by Andrew Gordon and his partner Kevin Zilka. Oso-IP has a Texas registered address of 211 West Tyler Street, Suite C, Longview, Texas, and other entities are also known to have the same registered address as Oso-IP in Texas, including: Jenam Tech, LLC, Aloft Media, Azure, Stragent, and Mjaen Tech. Andrew Gordon (also known as George Andrew Gordon) is also the registered agent for Oso-IP at that address. Kevin Zilka is the sole member of Oso-IP, and is or has been a member of Aloft Media, Azure, and Stragent. Boccone, LLC acquired the '136 patent from Ozog Media, LLC on July 17, 2018.

Petitioners identify these entities and associated individuals in an abundance of caution to assist the Board with respect to identification of any potential conflicts of interest.

B. Related Matters

A decision in this proceeding could affect or be affected by the following:

1. United States Patent & Trademark Office

The application from which U.S. Patent No. 10,027,726 issued is a Continuation-in-part (CIP) of U.S. Patent Application No. 15/150,408, which is a CIP of U.S. Patent Application No. 14/582,946 ('946 application), now U.S. Patent No. 9,336,435, which is a CIP of U.S. Patent Application No. 14/085,832, which claims priority to U.S. Provisional Patent Application Nos. 61/784,109; 61/759,816; 61/731,462; and 61/729,259.

2. United States Patent Trial and Appeal Board

Petitioners are concurrently filing Petitions for *Inter Partes* Review against related U.S. Patent Nos. 10,019,136 and 10,027,727. Petitioners request that these three petitions be reviewed by the same panel, as the patents are commonly assigned and significantly overlap in subject matter

3. U.S. District Court for the Eastern District of Texas

(i) *Boccone, LLC v. Samsung Electronics Co., Ltd. et al.*, Civil Action No. 4:19-cv-00243 (E.D. Tex.); (ii) *Boccone, LLC v. LG Electronics, Inc. et al.*, Civil Action No. 4:19-cv-00244 (E.D. Tex.).

C. Counsel and Service Information - § 42.8(b)(3) and (4)

Lead Counsel	Richard F. Giunta, Reg. No. 36,149
Backup Counsel	Marc S. Johannes, Reg. No. 64,978 Anant K. Saraswat, Reg. No. 76,050 Gregory F. Corbett, *pro hac vice* application forthcoming Nathan R. Speed, *pro hac vice* application forthcoming Turhan F. Sarwar, *pro hac vice* application forthcoming

Service Information	E-mail: RGiunta-PTAB@wolfgreenfield.com MJohannes-PTAB@wolfgreenfield.com ASaraswat-PTAB@wolfgreenfield.com Gregory.Corbett@wolfgreenfield.com Nathan.Speed@wolfgreenfield.com Turhan.Sarwar@wolfgreenfield.com Post and hand delivery: Wolf, Greenfield & Sacks, P.C. 600 Atlantic Avenue Boston, MA 02210-2206 Telephone: 617-646-8000 Facsimile: 617-646-8646

A Power of Attorney is being submitted concurrently with the Petition. Counsel for Petitioners consents to service of all documents via electronic mail.

D. Certification of Grounds for Standing

The '726 patent is available for IPR, and Petitioners are not barred or estopped from requesting review of the challenged claims. 37 C.F.R. § 42.104(a).

E. Identification of Challenge and Relief Requested

Petitioners request cancellation of claims 1-30 on the following grounds.

Grounds and Reference(s)		Claims	Basis
1	Krupka	1-30	103
2	Perlmutter and Krupka	1-30	103

III. BACKGROUND ON THE '726 PATENT

A. Overview of the Claims

Independent claims 1, 23, and 27 are annotated to label claim elements in the Claim Listing table attached to this petition (*see* page 88). The limitations in claim 1 fall into three categories highlighted in different colors to aid in the discussion:

- conventional computer system components ([1A]-[1D], 71:50-57);
- displaying a first set of images recognized (e.g., using a face model generated on the device) as depicting a first face selected by a user ([1E]-[1G], 71:58-72:2)
- displaying a second set of images recognized as depicting at least one face associated with facial recognition information received from a third party with which the user has a relation ([1H]-[1I], 72:3-26), and sharing one or more of those images ([1J]-[1K], 72:27-32).

These recited features were all known in the art. Turk, ¶¶ 45-47.

Limitations [1A]-[1D] recite conventional computer components for executing software and device interaction, and limitations [1E]-[1G] recite the well-known technique of leveraging face recognition technology to find and display photos depicting a particular face selected by the user. Turk, ¶ 48. The examiner correctly determined these limitations were known. Ex. 1002, 242-243.

Limitations [1H]-[1K], which the Patent Office found were not explicitly disclosed in the prior art of record (Ex. 1002, 243), also recite known techniques (e.g., taught by Krupka, Johnson (Ex. 1007), Gokturk (Ex. 1011) of using face recognition information (*e.g.*, a face model) ***received*** from another device to find and

share photos. Turk, ¶ 49. Krupka—which was not before the examiner—discloses limitations [1H]-[1K]. *Id.*

Independent claim 23 recites an "apparatus" instead of a "device," but otherwise recites substantially the same limitations above. Independent claim 27 recites a method in which an apparatus communicates with a server to perform these same limitations.

B. Priority Date

The '726 patent claims priority to a number of applications, the earliest of which is a provisional filed November 21, 2012. Ex. 1001, (60). Petitioners do not concede the '726 patent is entitled to any earlier priority claim. However, all of the references relied upon herein are prior art even if the '726 patent were entitled to its earliest claimed priority date of November 21, 2012.

C. Level of Skill in the Art

A POSA in 2012 would have had at least a B.S. in Computer Science, Computer Engineering, or the equivalent, and two years of experience designing GUIs for software applications, including applications that utilized face recognition technology. This person would have understood generally-applicable principles of software engineering and data exchange and been capable of understanding and implementing the teachings of the prior art discussed herein. Turk, ¶ 30.

IV. CLAIM INTERPRETATION

Terms are construed herein using the *Phillips* standard used in district court. 37 C.F.R. § 42.100(b).

V. GROUNDS FOR UNPATENTABILITY

A. Ground 1: Claims 1-30 Would Have Been Obvious Over Krupka

1. Krupka (Ex. 1005)

Krupka published on June 23, 2011, and is § 102(b) prior art. Krupka was not considered during prosecution.

a. Krupka Discloses Finding/Displaying Images Using Facial Recognition

Krupka explains the "daunting task" of manually browsing through large photo collections to find photos of specific people was addressed by allowing a user to "tag his/her face" or "tag faces of others" (Krupka, [0002]) to build corresponding face models for identifying "other photos of the user" or "locating pictures of others in the user's albums" (*id.*). Turk, ¶ 97.

Krupka discloses "a face model building module" that "presents a graphical user interface (GUI)" (Krupka, [0040]) on a user's device so that the user can build a "face model" (*i.e.*, "a set of features that are representative of a face of a particular person," Krupka, [0039]) by "selecting or tagging" faces (Krupka, [0040]-[0041]). Turk, ¶¶ 98-99.

For example, Krupka's GUI displays "portions of digital images" that "appear to represent human faces" so the user can "select those portions that represent his/her face." Krupka, [0041]. Once built, these face models can be used to find, display, and share photos of that person accessible by the user's device. Krupka, [0037], [0050], [0058]; Turk, ¶¶ 98-102.

b. Krupka Discloses Finding and Sharing Photos Using Face Models Received Another Device

Krupka discloses a device receiving face models created by others, and using those received face models to find and share corresponding photos from the device's photo collection. Krupka, [0005]-[0007], [0064]-[0069], [0088]-[0091]; Turk, ¶¶ 105-107. Face model sharing makes more efficient the process of obtaining photos residing in albums belonging to others. Krupka, [0002]-[0007], [0064]; Turk, ¶ 108-110.

2. Claim 1

a. Krupka Discloses Limitations [1PRE]-[1D]

Krupka's FIG. 14 illustrates "a processor-based computer system" used to "implement any of the user computers" described in Krupka (Krupka devices), examples of which include a "laptop," "tablet," "smart phone," etc., ([0028], [0092]). This "computing ***device***" ([0092]) implementing the Krupka devices meets the preamble "*device*" and discloses each component recited in limitations [1A]-[1D] (*see e.g.*, annotations below). Krupka, [0092]-[0101]; Turk, ¶¶ 118-120.

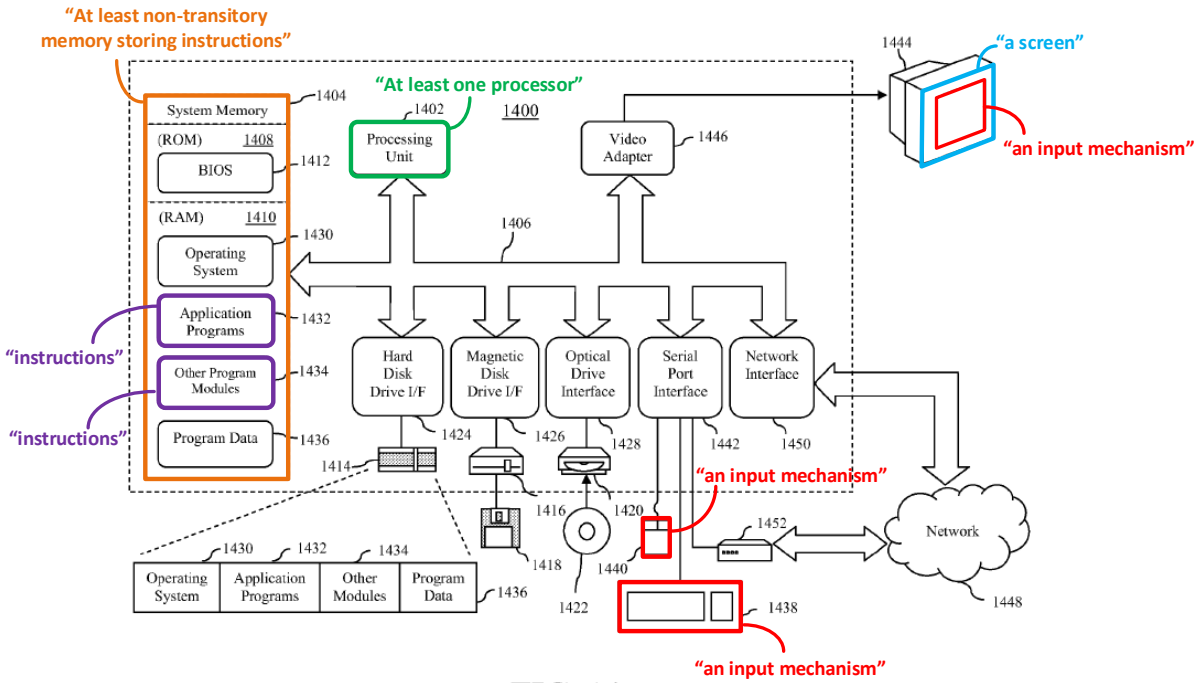


FIG. 14
(Annotated)

(1) *[1A] "a screen"*

Krupka's devices include a "monitor 1444 or other type of display device," ([0097]). A POSA would have understood the "display device" of the Krupka devices to meet the claimed "*screen*" (e.g., conventional screens for desktops or laptops, a "***touch screen***" ([0040]) for tablets and smart phones, etc.). Turk, ¶¶ 120-121.

(2) *[1B] "an input mechanism"*

Krupka discloses that a user "interacts" ([0040]) with the user device's display "using ***an input device***" "such as a keyboard, mouse, touch screen…" (*id.*) each of which meets the claimed "*input mechanism*." Turk, ¶¶ 122-123. A POSA would have understood that each of the disclosed Krupka devices would have included one

or more of the disclosed input devices so that the user can "interact" with the device's screen. *Id.* For example, the obvious way to implement Krupka's smart phone or tablet devices would have been to use the disclosed touch screen (which meets both the claimed "*screen*," and the claimed "*input mechanism*"), and the obvious way to implement Krupka's desktop or laptop computer is with a keyboard and/or mouse. *Id.*

(3) *[1C] "at least one non-transitory memory storing instructions"*

Krupka discloses "computer-readable media," including "system memory 404" that stores "***computer-readable instructions***" (Krupka, [0093]-[0095], [0100]-[0101]), including "application programs 1432" and/or "program modules 1434" that "when executed,…enable computer 400 to implement features of embodiments discussed herein." Krupka, [0093]-[0095], [0100]-[0101]. Thus, Krupka's "system memory 404" storing "computer-readable instructions" meets [1C]. Turk, ¶¶ 124-125.

(4) *[1D] "one or more processors in communication with…[elements [1A]-[1C]], wherein the one or more processors execute the instructions to cause the device to:*

Krupka discloses "***a processing unit 1402***" with "one or more processors" and "a bus 1406 that ***couples various system components including system memory 1404 and processing unit 1402***." Krupka, [0093]. The bus couples the processing

unit 1402 to each "*input mechanism*" and "*screen*" discussed for [1A]-[1B] above. Krupka, FIG. 14, [0096]-[0097]; Turk, ¶¶ 126-127.

The "computer programs and modules" (i.e., "computer-readable instructions") may include "***any of the software modules described herein***,…as well as logic for performing ***any of the various method steps described herein***…." ([0093]-[0095], [0099]-[0100]), including Krupka's "image finding/sharing module" (Krupka, [0095], FIG. 2). Turk, ¶ 128-129.

Thus, the processing unit of any the Krupka devices executing Krupka's image finding/sharing module or accessing a server that executes this software meets limitation [1D] because this software configures the device to perform limitations [1E]-[1K] when interacted with via the disclosed input mechanism (e.g., Krupka's "mouse," "keyboard," and/or "touch screen"). *Id*.

b. Krupka Discloses Finding and Displaying Photos of a Selected Face As Recited In Limitations [1E]-[1G]

Krupka's face model building GUI displays thumbnails of human faces so that the user can select faces of a person to create a face model, and then use that face model to find/display photos of that person. Krupka, [0006], [0040]-[0041], [0050], [0088]; Turk, ¶¶ 101-103, 130; §V.A.1.a.

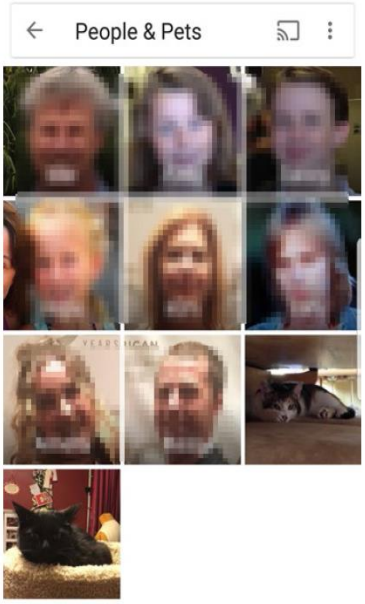
Krupka's image finding/sharing module can be invoked on any device with this software installed (or that can access a server-based installation [0071]-[0072]), so that any such device is "configured" to perform any and all of the disclosed

functionality performed by this software. Krupka, [0054] (image finding/sharing module installed on a second user computer "is configured to perform essentially the same functions" and "includes the same components" as the software on the first user computer); [0068] ("second user computer 104 can also build a face model of the second user"); [0072]. Any device thus configured meets limitations [1E]-[1G]. Turk, ¶ 131.

(1) *[1E] "display, utilizing the screen of the device, a plurality of indicia each including at least a portion of an image including a face"*

"[I]ndicia" appears twice in the specification. Ex. 1001, 35:61-67, 36:62-64 ("[T]he first user may select the target faces (e.g. by clicking, touching, and/or otherwise selecting the pictorial indicia or related indicia, etc.)."). The '726 patent also incorporates by reference the '946 Application (Ex. 1008), *see* Ex. 1001, 1:36-41, which states that "***indicia may include any visible interface element associated with a face or object,***" including "faces" and/or "textual identifiers…associated with…faces." Ex. 1008, [0035].

A POSA would thus have understood "indicia" to at least include any visible interface element associated with a face. Turk, ¶¶ 132-133. This is consistent with Boccone's infringement contention (screen-shot below), which identifies thumbnails that include a face as "indicia." *Id.;* Ex. 1009, 3.



To assist in building face models, Krupka's face model building module "presents a graphical user interface (GUI)" to the display of the user's device that displays "portions of digital images" that the software determined "appear to represent human faces." Krupka, [0040]-[0041]. The user "select[s] those portions that represent his/her face" (*id.*). Turk, ¶¶ 134-135

These ***human faces*** appearing in portions of ***digital images*** each provide a visible interface element associated with a face and are thus "*a plurality of indicia*" displayed on "*the screen of the device,"* because these faces are displayed on the user's device and the user can "***select*** those portions that represent his/her face." Krupka, [0040]-[0041]; Turk, ¶ 136. This GUI displaying human faces therefore meets limitation [1E]. *Id.*

(2) *[1F] "receive, utilizing the input mechanism of the device, a user input in connection with at least one of*

the indicia including at least a portion of a first image including a first face"

A user interacts with Krupka's GUI displayed on the user's device using an "input device" such as a "keyboard," "mouse," "touch screen," etc., to select those displayed human faces that represent the user. Krupka, [0040]-[0041]; Turk, ¶ 137.

This disclosure meets limitation [1F] because, when the user "utilizes ***an input device*** to select those portions that ***represent his/her face***" (Krupka, [0041]), this "*user input*" is received by the user's device via the claimed "*input mechanism*." Turk, ¶ 138. This user input is also received "*in connection with at least one of the indicia including at least a portion of a first image including a first face*" because the user is selecting portions of images of human faces ("*at least one of the indicia*") that represent the user ("*a first face*"). *Id.*

(3) ***[1G] "after receiving the user input in connection with the at least one indicia, display, utilizing the screen of the device, a first set of images each including the first face that has been recognized in at least one of a plurality of images accessible via the device"***

Krupka discloses that once the user's face model is built, it can be used to find photos of the user that are "stored on or accessible" by the user's device. Krupka, [0050]; Turk, ¶ 139. Thus, these photos of the user found using the user's face model recognized in the photo collection accessible by the user's device meets "*a first set of images each including the first face that has been recognized in at least one of a*

plurality of images accessible via the device" in limitation [1G]. *Id. See also* Krupka, [0002] (conventional use of face models is to find photos of a user or of others).

A POSA would also have understood from Krupka's disclosure that the photos of the user found with this face model ([0050]) would then be displayed on the user's device, and therefore Krupka meets limitation [1G]. Turk, ¶ 140; Krupka, [0002] (conventional use of a face model is to help a user find photos the "user is often interested in ***seeing***"). The reasonable inference a POSA would have made based on Krupka's disclosure is that the photos found using the created face model are then displayed to the user given that Krupka discloses a system designed to find, display and share photos. Turk, ¶ 140; *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

To the extent that Krupka does not explicitly state that photos found with a face model created by the user are then displayed, it would have been the obvious way to implement Krupka so that the user can see the search results and further interact with them, for example, by selecting photos to share with others (Krupka, [0088]-[0091]) or identifying photos erroneously identified (Krupka, [0080], [0081]). Turk, ¶ 141. This obvious implementation of Krupka meets limitation [1G]. *Id.*

As one example, Krupka discloses that pictures found using a face model are displayed in a "Pictures Found" window along with the option to share the found images, as shown in FIG. 13 reproduced below. Krupka, [0088].

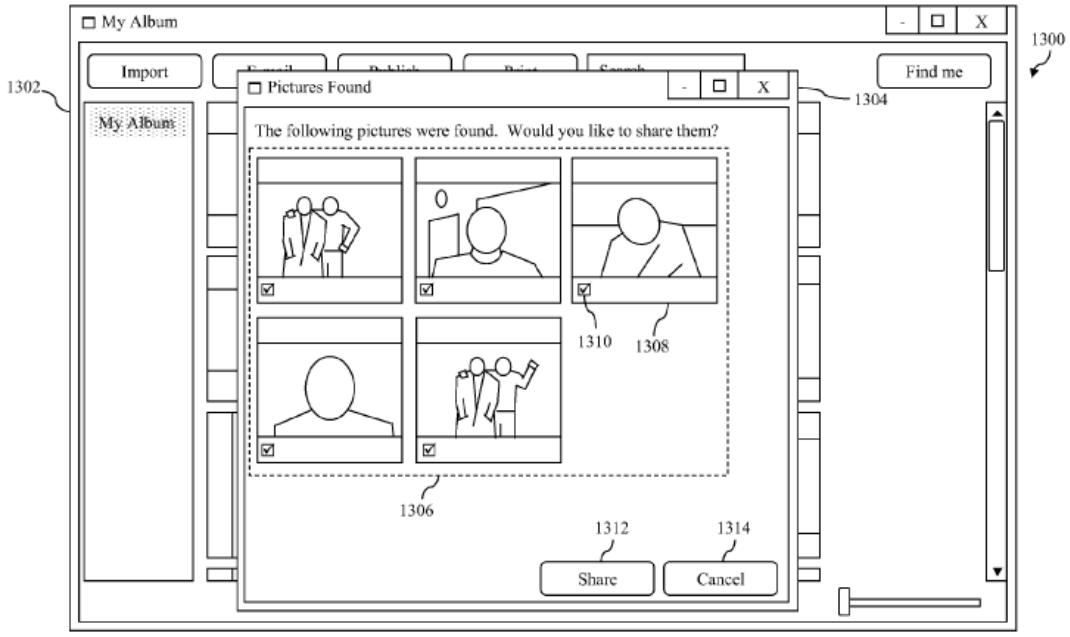


FIG. 13

In the specific example described in [0088]-[0091] of Krupka, FIG. 13's GUI is invoked to display images found using a shared/received face model (*see* §V.A.2.c *infra*). To the extent Krupka does not explicitly describe an example in which the found photos displayed in the "Pictures Found" window are found using a face model created by that user, a straightforward and obvious way to implement Krupka to allow the user to see those found photos in Krupka's system is to use Krupka's same "Pictures Found" window, which conveniently provides options to then share the found photos. *Id.*; Turk, ¶¶ 143-144.

c. Krupka Discloses the Utilization of Third Party Face Recognition Information to Display and Share Photos Recited in Limitations [1H]-[1K]

Krupka's disclosure of using a face model received from another user to find corresponding photos in the user's photo collection and selectively sharing those photos meets limitations [1H]-[1K] per below. Turk, ¶ 145.

(1) *Krupka's Using a Face Model Built and Shared by Invitation From a User on a Different Device Meets Limitation [1H]*

Limitation [1H] has three parts addressed separately below. Krupka's disclosure of using shared/received face models to find and share photos (§V.A.1.b) meets all three. Turk, ¶¶ 145-147.

(i) *[1H.i] "display, utilizing the screen of the device, at least one option for sharing images,"*

Krupka discloses using face models built by others on their devices to find and share photos in one's own photo collection. Krupka, [0051]-[0065], [0083]-[0091]; Turk, ¶ 148. FIG. 13 (below) illustrates a "Pictures Found" window that displays, on a second user's device, pictures of a first user found by the second user's device using a face model built by and received from the first user's device. *Id*.

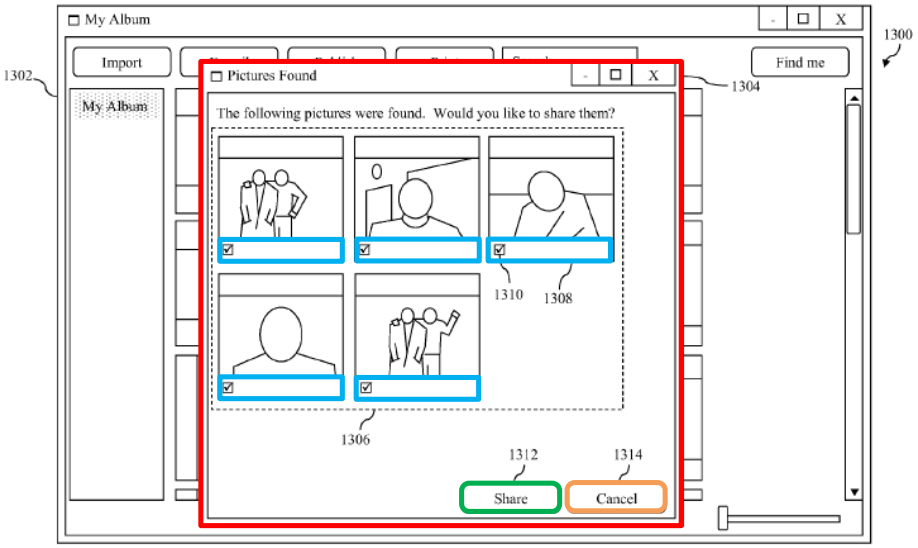


FIG. 13
(Annotated)

The "Pictures Found" window (red) meets the claimed "*display, utilizing the screen of the device, at least one option for sharing images*" because it displays found images ("pictures") on the screen of the user's device (the second user's computer in this example) and asks "[w]ould you like to share them?" (Krupka, FIG. 13). Turk, ¶ 149-150.

The "Pictures Found" window also displays additional options for sharing images, including checkboxes (blue) that allow the user to select images to share, and share button 1312 (green) for sharing checked images, each of which also meets limitation [1H.i]. *Id.* Krupka, [0090]-[0091].

(ii) ***[1H.ii] "where the sharing is performed utilizing face recognition information that is based on third party input of a third party that is provided by the***

third party into at least one other device in association with at least one face,"

The "face model of the first user" (Krupka, [0089]) used to find the photos displayed in the "Pictures Found" window was built using the first user computer 102 based on input from the first user interacting with Krupka's face model building module using either the "selecting or tagging" approach (Krupka, [0040]-[0041]) or a video capture approach (Krupka, [0042]-[0049], [0076]-[0082]). Turk, ¶¶ 151-152.

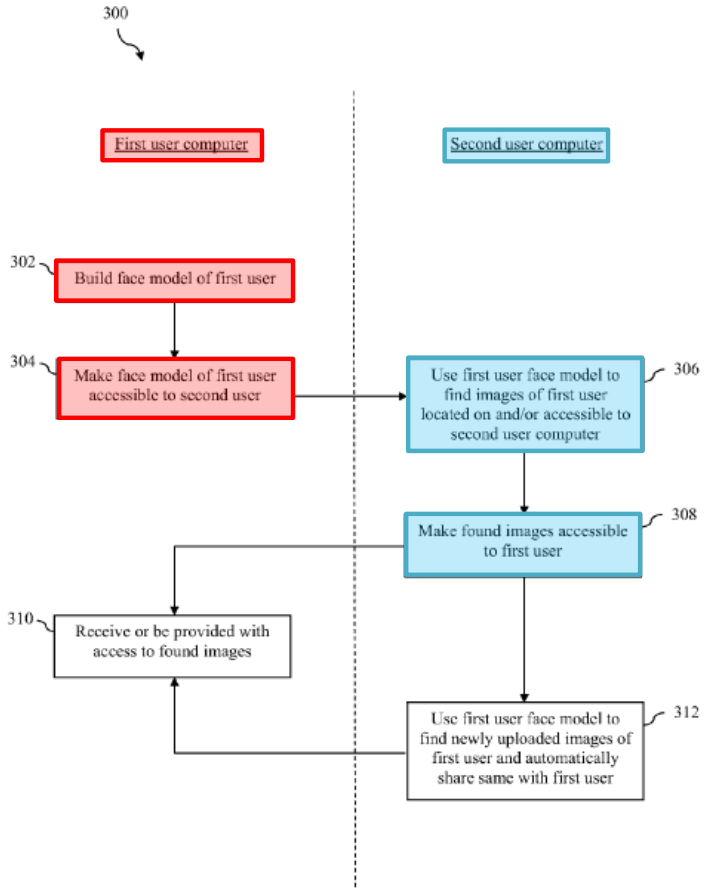


FIG. 3
(Annotated)

A face model comprising "a set of features that are representative of a face of a particular person," (Krupka, [0039]) is built from input from the first user into a first user computer (step 302). Krupka, [0039]-[0049]. Such a face model therefore meets the claimed "*face recognition information*," described in the '726 patent as including "any feature of a face." Ex. 1001, 6:66-7:8, 12:59-13:7; Turk, ¶ 153. Once built, the face model is made accessible to the second user (step 304). Krupka, [0051]-[0053]. These steps are performed on the first user's computer (in red above).

The face model built and shared by the first user is utilized by the second user's computer to find photos of the first user that can be shared with the first user (steps 306, 308), an example implementation of which is shown by the "Pictures Found" window of FIG. 13. Krupka, [0054], [0088]-[0091]; Turk, ¶ 154. These steps are performed on the second user's device (in blue above).

Thus, Krupka discloses limitation [1H.ii] because the second user's device utilizes the face model ("*face recognition information"*) of the first user ("*third party"*) that is based on input from the first user ("*third party input"*) provided to the first user computer ("*into at least one other device*") in connection with the first user's face ("*in association with at least one face*."). Turk, ¶ 155.

Additionally, "*sharing is performed utilizing face recognition information"* because Krupka discloses that "[w]hen share button 1312 is activated by a user of second user computer 104, the checked images appearing in set 1306 will be shared

with the first user." Krupka, [0091]; Turk, ¶ 156. That is, the sharing of the images of the first user is performed by utilizing the face model of the first user. *Id.*

(iii) ***[1H.iii] "the face recognition information being utilized in connection with the at least one option for sharing images based on a relation between a user of the device and the third party associated with the third party input, such that the face recognition information is only utilized in connection with the at least one option for sharing images if the relation exists between the user of the device and the third party associated with the third party input"***

"[R]elation" appears only in the claims and in the "Summary" that repeats the claim language. Dependent claims clarify that "relations" between users "include relationships" (claim 22) and can be established based on:

(1) "an invitation and an acceptance of the invitation" (claim 13),

(2) "a request and a response to the request" (claim 22),

(3) presence in "a contact database" (claim 14), or

(4) "one or more previous communications" between users (claim 24).

Ex. 1001, 73:47-49, 73:50-53, 75:59-61, 76:66-67. Krupka discloses each type of "relation" (1)-(4) Turk, ¶ 157.

Krupka discloses a second user sharing photos found using a first user's face model only after a relation has been established between the first and second users. Turk, ¶ 158. A first user's face model is shared with a second user only after (a) the first user has sent an e-mail inviting the second user to exchange photos using

Krupka's image finding/sharing software (FIGS. 11-12), and (b) the second user has accepted the invitation by installing Krupka's software. *Id.*; Krupka, [0084]-[0085]. This invitation-acceptance process (which includes responding to a request to install software) establishes both user relations (1) and (2) above. Turk, ¶¶ 158, 163-165.

Because the shared/received face model is utilized to find the photos displayed by the "Picture Found" window (§V.A.2.c(1)(i)), the shared/received face model is utilized "*in connection with the at least one option to share*," and because this utilization occurs only after the image finding/sharing software is downloaded by the second user after receiving an invitation to do so, it occurs "*only*" "*if*" the "*relation exists between the user of the device and the third party associated with the third party input*." Turk, ¶ 159.

Even prior to the invitation-acceptance process, Krupka's first and second users already have a "*relation*" as the second user is a "contact" of the first user (Krupka, [0083], FIG. 11). Turk, ¶ 160. This pre-existing contact meets user relations (3) and (4) above. *Id.;* Ex. 1001, 76:66-67. Krupka meets limitation [1H.iii] for this independent reason. Turk, ¶¶ 166-167.

Krupka also discloses limitation [1H.iii] by establishing what the '726 patent refers to as "indirect relationships" (Ex. 1001, 34:27-35, 34:35-59). Turk, ¶ 161. Krupka discloses that users can invite other users to share photos found using shared/received face models (Krupka, [0064]-[0070], which establishes "*a relation*"

per above), and additionally each user that installs the image finding/sharing software in response to an invitation also has "*a relation*" with each of the other users similarly invited for the additional reason that a POSA would have understood "*a relation*" to also include such "indirect relationships" disclosed in the '726 patent (Ex. 1001, 34:27-35, 34:35-59) by which a user has a relation with another user via one or more intermediate users having a sharing relationship. Turk, ¶ 161. Krupka discloses limitation [1H.iii] for this additional reason. Turk, ¶¶ 168-170.

(2) ***[1I] "in connection with the at least one option for sharing images, display, utilizing the screen of the device, a second set of images each including the at least one face that has been recognized in at least one of the plurality of images accessible via the device utilizing the face recognition information"***

Krupka discloses limitation [1I] because the "Pictures Found" window displays "a set of images 1306 of a first user that were found by a face model classifier module executing on second user computer 104 based on a face model of the first user." Krupka, [0089]; Turk, ¶¶ 171-172.

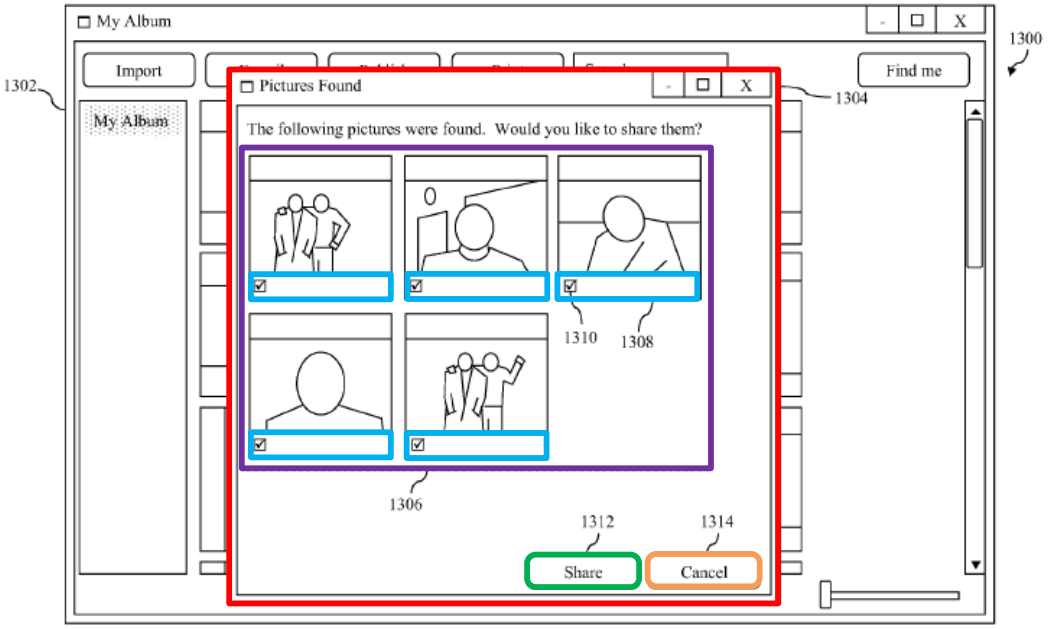
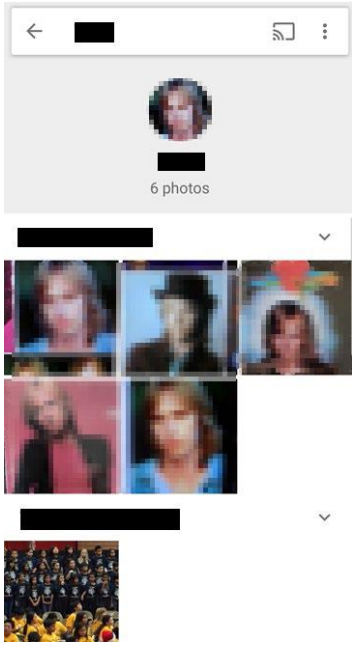


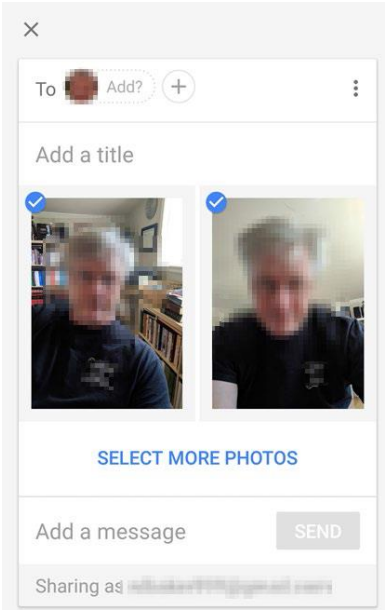
FIG. 13
(Annotated)

This set of images 1306 meets "*a second set of images each including the at least one face recognized in at least one of the plurality of images accessible via the device utilizing the face recognition information*" because they are of the first user using the face model received from the first user device, and are found in images accessible to second user computer. Turk, ¶¶ 171-172; Krupka, [0054], [0088]-[0089]. Images 1306 also meet "*display*" on "*the screen of the device*" "*in connection with the at least one option for sharing images*" because these images are displayed in the "Pictures Found" GUI with other options for sharing (e.g., checkboxes, share button, etc.). *Id.*

Claim 1 does not require any correspondence between the "*first set of images*" and the "*second set of images*" or the faces depicted (i.e., the "*first face*" and the "*at*

least one face," respectively) other than that both are recognized from the "*plurality of images accessible via the device*," (*e.g.*, second user computer configured by Krupka's software). Turk, ¶ 173. This is consistent with Boccone's infringement contentions (screen-shots below), where images of different faces are alleged to read on the "*first set of images*" (left) and the "*second set of images*" (right). Ex. 1009, 3-7; Turk, ¶¶ 58-65. *See* also dependent claim 22 (Ex. 1001, 74:65, 75:41-42). Turk, ¶¶ 55-57.





(3) ***[1J] "receive, utilizing the input mechanism of the device, a user input in connection with at least one of the second set of images"***

Krupka's "Pictures Found" window displays a checkbox for each found image so that a user can select which found images to share/not share. Krupka, [0090]. The

user selecting images to share via the checkboxes using the device's "input device" meets limitation [1J]. Turk, ¶ 174.

(4) ***[1K] "after receiving the user input in connection with at least one of the second set of images, cause one or more of the second set of images to be shared."***

Krupka discloses that "[w]hen share button 1312 is activated by a user of second user computer 104, the checked images appearing in set 1306 will be shared with the first user." Krupka, [0091]. Thus, limitation [1K] is met because Krupka discloses that after the second user has selected images to be shared via the checkboxes ([1J]), the checked images are shared upon activating the share button. Turk, ¶ 175.

3. Claim 2

Claim 2 depends from claim 1 and merely recites limitations commonly found in conventional digital photo sharing systems that share photos found using face recognition. Turk, ¶ 177, 180; Krupka, [0001]-[0002].

Krupka's "e-mail module" that enables a user to "create and send e-mails" and can be "invoked" by Krupka's "image sharing module" to transfer images "by email" that are found using face models meets claim 2 per below. Krupka, [0032], [0058]; Turk, ¶¶ 179-184.

a. [2A] "display, utilizing the screen of the device, at least one additional option for sharing images"

Krupka's image finding/sharing software includes an "image sharing module" that "operates to share images located by using [the] face model classifier module" (Krupka, [0037], FIG. 2) using face models created by the user (Krupka, [0050]) and/or face models received from others (Krupka, [0054]). Turk, ¶ 179; Krupka, [0037], [0057]-[0061], FIG. 2. To perform this sharing, Krupka's above-discussed "Pictures Found" window of FIG. 13 is presented by the image sharing module to display found pictures and allow the user to selectively share them. Turk, ¶ 179; Krupka, [0088].

In [0088]-[0091] of Krupka, the FIG. 13 GUI is described as being invoked to show images specifically found using a shared/received face model. Krupka describes that it was conventional for users to share images from their collections of photos (e.g., via e-mail) and to find images of the user or others (family and friends) using a face model built by the user's device. Krupka, [0001]-[0002]; Turk, ¶ 180.

A POSA would have had reasons to maintain this known functionality in Krupka's system so that the user can benefit from this known functionality and not be restricted to only sharing images found using a shared/received face model received from another, but can also share images found using a face model the user created. Turk, ¶ 181.

A straightforward and obvious way to allow the user to perform the conventional function of sharing photos found using a face model built by the user in Krupka's system is to use Krupka's same "Pictures Found" GUI, because the way in which Krupka allows photo sharing is un-impacted by where the face model used to find the candidate photos was created, and the system would be more intuitive for the user if there was a common GUI used for sharing photos found using any face model regardless of where it originated. Turk, ¶ 182.

Krupka teaches that "sharing of the found images…may be achieved in a variety of ways" (Krupka, [0058]) using the image sharing module. Turk, ¶ 183. One option is for the image sharing module to upload found images to a remote server and notify recipient(s) so the recipient(s) can access the shared images via their own copy of the software (Krupka, [0057]-[0061]). Turk, ¶ 183. The image sharing module also can "invoke the e-mail module" to transfer found images "by e-mail," perform a "direct file transfer" between the sender and recipients' computers, or store found images to a CD or flash drive. *Id.;* Krupka, [0058]-[0059].

Krupka does not describe any specific technique for allowing the user to choose among Krupka's different options for sharing images. A conventional and obvious way to do so would have been to identify those options in a GUI to the user and allow the user to choose the user's preferred option. Turk, ¶ 186. In one obvious implementation, when the user activates "Share" button 1312 of the

"Pictures Found" window, the image sharing module presents the user with the options (e.g., an "E-mail" button to share via e-mail, an "Upload" button to share via a remote server, etc.) so the user can select which share option he/she prefers for sharing the images selected in the "Pictures Found" window. *Id.;* Krupka, [0091].

This was the routine and conventional way to allow a user to select among different available share options. Turk, ¶ 187 (citing Young (Ex. 1010) as a conventional example where a "Share Photos" option displays an interface that allows the user to select which contacts to send photos to and how to send them).

Implementing Krupka's disclosed different options for sharing images by displaying the options to the user meets "*at least one additional option for sharing images*" because in addition to the "*at least one option to share images"* provided by Krupka's "Share" button, this ***additional*** option to select the method of sharing those found images is displayed on the user's device. Turk, ¶¶ 188-189.

b. [2B] "in connection with the at least one additional option for sharing images:"

Limitation [2B] is met for the reasons discussed *infra* §V.A.3.f. Turk, ¶ 194.

c. [2C] "*receive, utilizing the input mechanism of the device, an email address or a name of at least one other person"*

Krupka's option to share found photos via e-mail utilizes an e-mail address of another person. Specifically, to share photos via e-mail, *e.g.*, when the "image

sharing module" "invokes e-mail module 122 and transfers the found images…by e-mail" (Krupka, [0058]), the e-mail address of intended recipient(s) is received from the user via the device's input mechanism so that the software knows where to e-mail the photos. Turk, ¶ 196.

Krupka's e-mail module comprises a conventional e-mail program like Microsoft Outlook ([0032]), and a POSA would have understood that an e-mail sent via Microsoft Outlook conventionally uses an e-mail address input by the user. Turk, ¶ 197. Krupka explains as much when describing FIG. 12 (below) which depicts an "example e-mail" Krupka's software can generate. Krupka, [0021], [0085], FIG. 12 (element 1204); *see also* [0083] (explaining that a user's contacts are identified by name and e-mail address as depicted in FIG. 11).

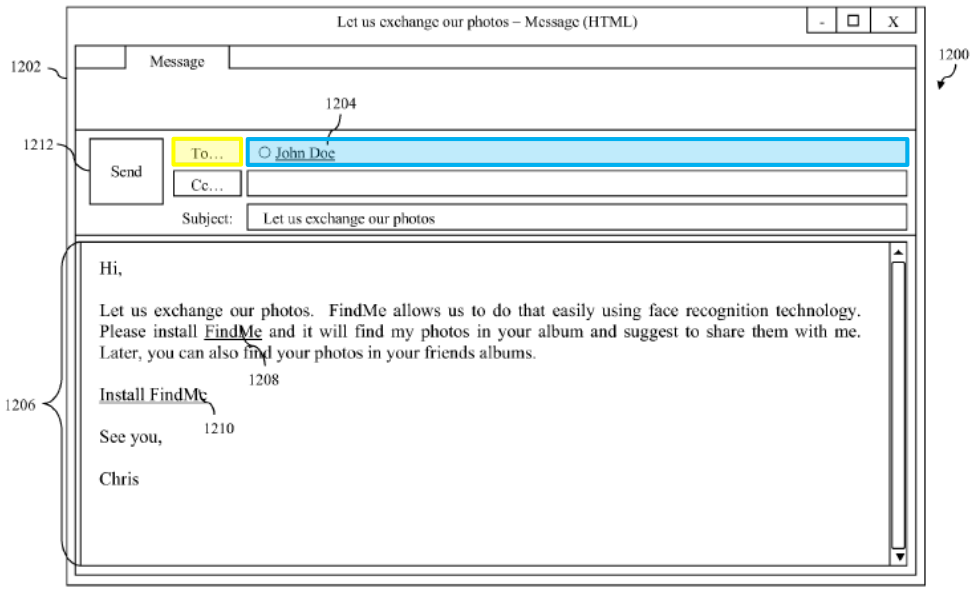


FIG. 12

Alternatively, the conventional and obvious way to implement the email sending that Krupka describes is to receive the e-mail address of intended recipients from the user via the device's input mechanism when the image sharing module invokes the e-mail module, either by directly entering e-mail address(es) into the recipient field of the e-mail (highlighted in blue above), or selecting the "To…" button (highlighted in yellow above) to open a list of contacts from which the user can choose recipient(s) (e.g., via Krupka's "Choose Contact" window illustrated in FIG. 11), both options of which meet limitation [2C]. Turk, ¶ 198.

d. [2D] "*display, utilizing the screen of the device, the plurality of indicia each including the at least portion of the image including the face*"

Limitation [2D] uses similar language to limitation [1E], referring to "*the plurality of indicia*" recited in claim 1. Krupka meets limitation [2D] for the same reasons described for limitation [1E] by displaying portions of images on the user's computer that the software recognizes as including human faces. Turk, ¶ 202; §V.A.2.b(1).

e. [2E] "*receive, utilizing the input mechanism of the device, a user input in connection with one or more of the indicia corresponding to one or more faces*"

Limitation [2E] uses similar language to limitation [1F] except that the user selects indicia corresponding to "*one or more faces*," instead of "*a first face*." Krupka discloses limitation [2E] for the reasons described for limitation [1F], where

the "*one or more faces*" can be any face tagged by the user to build a face model to find photos of that face, including when the user tags him/herself or tags the faces of others. Krupka, [0006], [0040]-[0041]; Turk, ¶ 203; §V.A.2.b(2).

f. [2F] "*based on the user input in connection with the one or more of the indicia corresponding to the one or more faces and utilizing the email address or the name of the at least one other person, cause sharing of a third set of images each including the one or more faces that has been recognized in at least one of the plurality of images accessible via the device*"

Limitation [2F] is similar to limitation [1G] in that a set of images recognized as including the face(s) selected by the user are found in the plurality of images accessible via the user's device and this aspect is met for the same reasons that Krupka meets [1G]. Turk ¶ 204; §V.A.2.b(3).

Specifically, Krupka discloses using the face model building GUI to tag faces in photos to build corresponding face models to facilitate finding and sharing photos of those faces. Krupka, [0006], [0040]-[0041], [0037], [0050], [0058]; Turk, ¶ 205. Thus, photos found in a user's photo collection using a face model built from the user tagging photos of him/herself or tagging the face of others meets the claimed "*third set of images each including the one or more faces that has been recognized in at least one of the plurality of images accessible via the device*." *Id.;* §V.A.2.b(3).

The limitation in [2F] of causing the found images to be shared based on the e-mail address of another person ([2C]) is met by Krupka's e-mail sharing option provided by Krupka's image sharing software. Turk, ¶ 206.

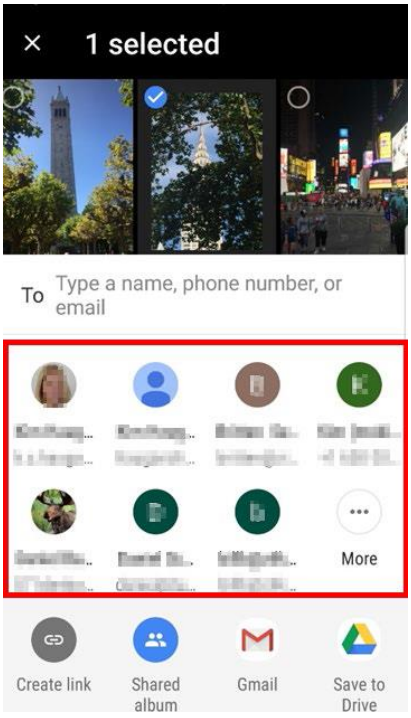
When the user selects how to share the found photos by choosing Krupka's email option to share, Krupka's image sharing module "invokes the e-mail module" and "transfers the found images" to selected recipients "by email" (Krupka, [0058]), thus causing "*sharing"* of the *"third set of images"* that is *"based on the user input in connection with the one or more of the indicia corresponding to the one or more faces*" (e.g., the user selecting from human faces "portions that represent his/her face" (Krupka, [0041])), and that "*utilize[es] the email address…of the at least one other person*" received from the user ([2C] above). Turk, ¶ 207.

Limitation [2B] is met because when images found using a face model built from a face selected by the user from displayed human faces ([2D]-[2E]) are shared via email ([2F]) using the email address received from the user ([2C]) by selecting to share via Krupka's email share option, limitations [2C]-[2F] are ***each*** performed "*in connection with the at least one additional option for sharing images*." Turk, ¶ 209; Krupka, [0032], [0058]-[0060].

4. Claim 3

Claim 3 depends from claim 2 and further recites that "*the third set of images is caused to be shared by causing an invitation to be sent to the email address of the at least one other person.*"

Krupka's teaching to e-mail photos found of another user (*see* claim 2 in §V.A.3) meets claim 3. A POSA would have understood that when a user emails another user and attaches photos of that user, that email is an invitation to view the photos. Turk, ¶ 211. This is consistent with Boccone's infringement contentions (screen-shots below) alleging that claim 3 reads on an e-mail sent to a recipient including a photo allegedly of that recipient. *Id.;* Ex. 1009, 26.



Krupka also discloses sharing by using the image finding/sharing module to upload images to a remote server. Krupka, [0058]-[0061]; Turk, ¶ 212. To use this option, a recipient installs Krupka's image finding/sharing software to access the remote server, which is accomplished by the recipient receiving an e-mail invitation to exchange photos by downloading this software (§§V.A.2.c(1)(iii)). Krupka, [0083]-[0085]; Turk, ¶¶ 190-193.

Thus, Krupka's upload option that can be selected via the additional option to share and which displays the "Choose Contact" window (meeting [2A], Turk, ¶¶ 190-193) to receive the ***email address*** of the recipient of the ***email invitation*** (meeting [2C], Turk, ¶¶ 199-201) so that found photos can be exchanged via the remote server (meeting [2F] and [2B], Turk, ¶¶ 204-209) also meets claim 2, and as an additional option for sharing images that causes "*an invitation to be sent to the email address of the at least one other person*," it also meets claim 3. Turk, ¶¶ 212-213.

5. Claim 4

Claim 4 depends from claim 2 and further recites that "*in response to the one or more faces being recognized in new images, the new images are automatically caused to be shared after the third set of images is caused to be shared*."

In the context of a first user sharing a face model with a second user, Krupka discloses that every time the second user adds new images to his/her photo

collection, the image finding/sharing software uses the shared/received face model to find newly added images of the first user and automatically shares the found images. Krupka, [0062].

A POSA would have been motivated to apply Krupka's feature of automatically sharing newly added photos to photos that were originally shared using a face model created on the user's device (§V.A.3), so that the user does not have to manually invoke the finding/sharing functionality when new photos are added that include a face for which the user has previously decided to share photos from his/her collection. Turk, ¶ 216-217.

6. Claim 5

Claim 5 depends from claim 2 and further recites that "*the plurality of indicia is part of a face screen that is configured for receiving tags in connection with the plurality of indicia, and the tags are displayed with the plurality of indicia in connection with the at least one additional option for sharing images.*"

Krupka's face model building GUI displays human faces (*i.e.*, "*the plurality of indicia"*) from which the user tags faces of interest to build corresponding face models (Krupka, [0006], [0040]-[0041]), thus this GUI is "*configured for receiving tags in connection with the plurality of indicia*." Turk, ¶ 219. A POSA would have understood this ***display of human faces*** to meet the claimed "*face screen*" (a term used in claim 5 only). *Id*.

Krupka discloses associating received tags with face models so that a user can search for photos of any person having a corresponding face model available by selecting the name of the person (*i.e.*, the associated tag) (Krupka, [0050], [0064]). Turk, ¶ 221. Krupka does not explicitly state that this tag is then displayed along with photos found of that person, but displaying tags with photos of a person was commonly done in digital photo sharing systems that used face recognition to identify people in photos. *Id.* (citing Perlmutter (Ex. 1006), Gokturk, Young).

A POSA would have had reasons to implement this known feature to display Krupka's tags received from the user to conveniently show the identity of the person in photos found using a face model built using Krupka's GUI (i.e., "*the face screen*" of which "*the plurality of indicia is part*" where these tags are received) along with the different options by which the user can share those photos (i.e. "*in connection with*" the "*additional option to share images*"). Turk, ¶ 222-223. Displaying tags received when building a face model in Krupka's "Pictures Found" window with photos found using that face model, along with Krupka's options to share those images, would merely have been the use of the known technique of displaying tags to yield the predictable result of providing a more user-friendly interface. *Id*; *KSR*, 550 U.S. *416.

7. Claim 6

Claim 6 depends from claim 1 and further recites that after the displaying recited in [1H], "*the second set of images is conditionally displayed*" based on "*user input in connection with the at least one option for sharing images.*"

Krupka discloses that images found using a shared/received face model can either be automatically shared or displayed in the GUI (the "Pictures Found" window) so that the user can "select which of the found images he/she chooses to share" (Krupka, [0057]). Therefore, Krupka's found images are "*conditionally displayed*" depending on whether found images are automatically shared (i.e., without being displayed) or are displayed in the GUI to allow the user to select which images to share. Turk, ¶ 225.

Additionally, Krupka's "*second set of images*"—those presented in the "Pictures Found" window of FIG. 13—are "*conditionally displayed*" because the "Pictures Found" window opens only if a third-party has invited the user to install Krupka's image sharing module ([0085]) and the user has opted to do so ([0089]). Turk, ¶ 226. Displaying the "Pictures Found" window is thus conditioned on the third-party sending an invitation to the user to install Krupka's image finding/sharing module and the user accepting the invitation and installing the module. Krupka therefore meets claim 6 for this additional reason. *Id*.

This understanding of claim 6's scope is consistent with Boccone's infringement contentions, which identifies an option to allow contacts to recognize the user's face in photos as meeting the "*conditionally displayed*" element of claim 6. Ex. 1009, 26-27. Turk, ¶ 227.

8. Claim 7

Claim 7 depends from claim 1 and further recites that after the displaying limitation in [1H], "*display of the plurality of images is disabled or enabled,"* based on *"a user input in connection with the at least one option for sharing images*." Krupka discloses a number of ways that the "Pictures Found" window can be "*enabled*" or "*disabled*" that meet claim 7.

First, claim 7 is met for the same reasons the "*conditionally displayed*" element of claim 6 is met. Turk, ¶ 229. Specifically, display of photos by the "Pictures Found" window can be "*disabled*" or "*enabled*" depending on whether found images are automatically shared ("*disabled*") or displayed to the user via the GUI ("*enabled"*) to allow the user to select which images to share. *Id.* Krupka, [0057].

Claim 7 is also met because the display of the "Pictures Found" window can be "*disabled*" or "*enabled*" depending upon whether a third-party has invited the user to install Krupka's image sharing module ([0085]) and the user has opted to do so ([0089]). This understanding of claim 7's scope is consistent with Boccone's

infringement contentions. Ex. 1009, 26-27 (citing same subject matter as claim 6). Turk, ¶ 230.

The "Cancel" button (in orange below) and the standard window control elements (red) provide yet another way claim 7 is met because these interface elements are "*in connection with*" the "Pictures Found" window and provide additional ways to "*disable*" or "*enable*" the photos displayed therein by aborting the sharing process (Turk, ¶¶ 231-234) or collapsing/redisplaying the window (Turk, ¶¶ 234-235), respectively.

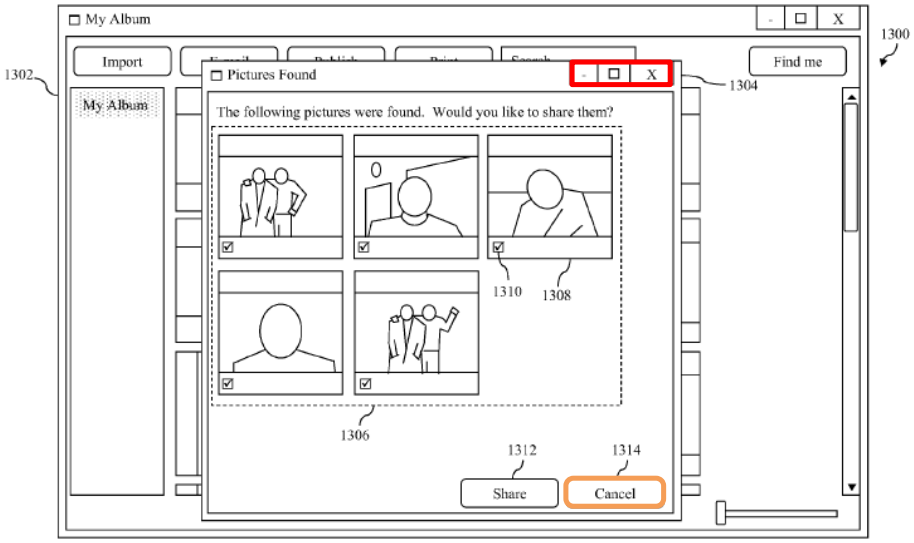


FIG. 13
(Annotated)

9. Claim 8

Claim 8 depends from claim 1 and further recites that "*the at least one face is a face of the third party, and the third party input includes an identification [sic] the face of the third party.*"

Krupka's two techniques by which a user can create a face model of his/her face that can be shared with others (Krupka, [0002], [0040]-[0049], [0076]-[0082]) ***both*** involve identifying the person for whom a face model is being built. Turk, ¶ 237.

Using the first technique, a user tags his/her face in photos to build a face model of him/herself ([0040]-[0041]). Turk, ¶ 238. A POSA would have understood that "tagging" ([0040]) faces in photos includes identifying the face, and further that when a face model is built from tagged photos, this identity is associated with the resulting face model. Krupka, [0064] ("each face model is associated with a user name"); Turk, ¶ 238. Therefore, when a user tags him/herself and that face model is shared with another, the user is the "*third party*" and the tagging is "*third party input"* that *"includes an identification [sic] the face of the third party*." *Id*.

Likewise, Krupka's video capture face model building process (FIG. 9 below) also meets claim 8. Using this technique ([0076]-[0079]), the identity of the person whose face model is being built is entered via "a data entry box 914 in which a user may enter his/her name" (e.g., "Chris,") and this name can be associated with the resulting face model ([0064]); Turk, ¶ 240.

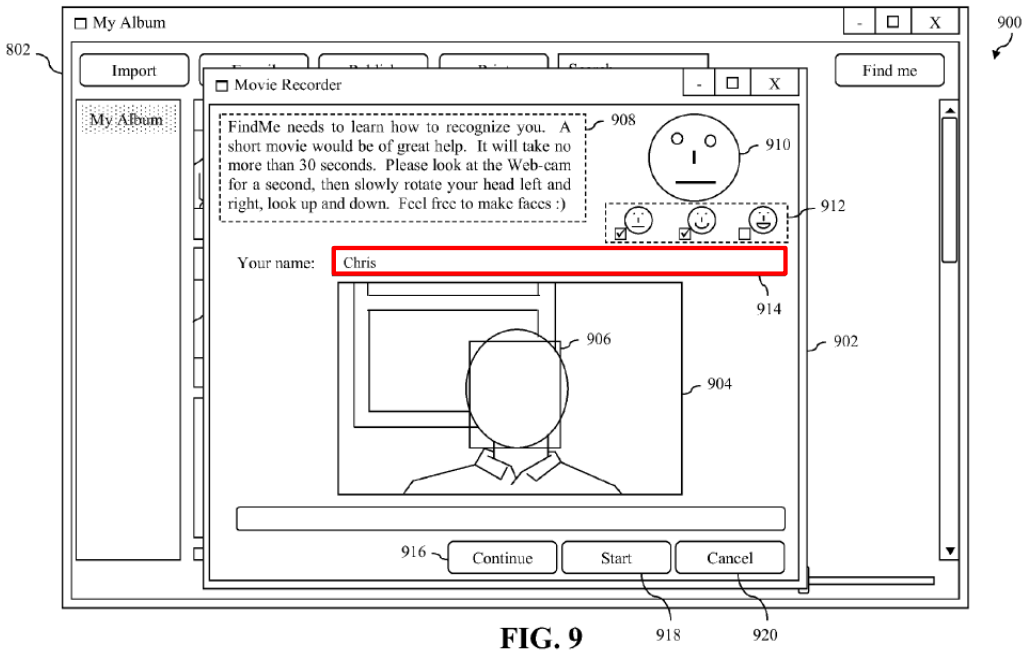


FIG. 9

When this face model is shared and received by another, the user is the "*third party*" and the face model is the "*face of the third party*." Turk, ¶¶ 241-242. Thus, the user input identifying the face associated with a shared/received face model, whether input via tagging or via the data entry box, includes "*an identification [sic] the face of the third party"* that meets claim 8. *Id.*

10. Claim 9

Claim 9 depends from claim 8 and further recites that "*the face recognition information is based on the third party input of the third party, by reflecting the face of the third party.*" Krupka discloses claim 9 because a POSA would have understood that a face model comprising "a set of feature that are representative of a face of a particular person" (Krupka, [0039]) built from photos of the user's face includes information "*reflecting the face"* of that user. Turk, ¶ 243.

11. Claim 10

Claim 10 depends from claim 1 and further recites that "*the face recognition information is based on the third party input…by including a correspondence that is identified by the third party input of the third party.*"

Krupka discloses including a "*correspondence that is identified by the third party*" for the same reasons discussed in connection with claim 8 (§V.A.9) by associating the identity of a person with his/her face model (e.g., associating a person's name with the face model that ***corresponds to*** that person). Krupka, [0040]-[0041], [0064], [0079]; Turk, ¶ 244.

12. Claim 11

Claim 11 depends from claim 1 and further recites that "*the third party input includes training input…*[repeats antecedent language from [1H] of claim 1]*."* Both of Krupka's face building techniques include a user providing training input to build a face model, either of which meets the claimed "*training input*." Turk, ¶ 245.

Specifically, the first technique uses those image portions selected by the third party user that represent his/her face to build a face model of the user (Krupka, [0040]-[0041]). Turk, ¶ 246. Additionally, Krupka's video capture technique displays to the third party user a preliminary set of images found using a face model built from the video so that the user can select the images that were correctly

identified to "improve the face model for the user" (Krupka, [0046]-[0048], [0080]-[0082]). Turk, ¶ 247.

A POSA would have understood the user input to build and/or improve a face model to be "*training input*." Turk, ¶ 248. The '726 patent describes "training data" as part of "*face recognition information*" (Ex. 1001, 12:6-13) so that any user input in connection with creating/building/improving a face model meets the claimed "*training input*." Turk, ¶ 248.

13. Claim 12

Claim 12 depends from claim 1 and recites "*the third party input correlates the at least one face with the third party*." Krupka discloses claim 12 because the third party user's input in connection with building a face model of him/herself correlates the user with his/her face using either face model building technique (§§V.A.9-V.A.12). Turk, ¶ 249.

Specifically, when a user selects images of his/her face (Krupka, [0040]-[0041]), or when the user selects those images of the user correctly identified by the software (Krupka, [0046]-[0047], [0080]-[0081]), this user input ***correlates*** the user's face with the user. Turk, ¶ 250.

14. Claim 13

Claim 13 depends from claim 1 and recites "*wherein the device is configured such that the relation is established based on an invitation and an acceptance of the invitation.*"

As discussed in §V.A.2.c(1)(iii), Krupka establishes "*a relation*" via the e-mail invitation sent to recipients selected via the "Choose Contacts" window of FIG. 11. Krupka, [0053], [0083]; Turk, ¶ 252. FIG. 12 of Krupka (below) illustrates an example e-mail invitation.

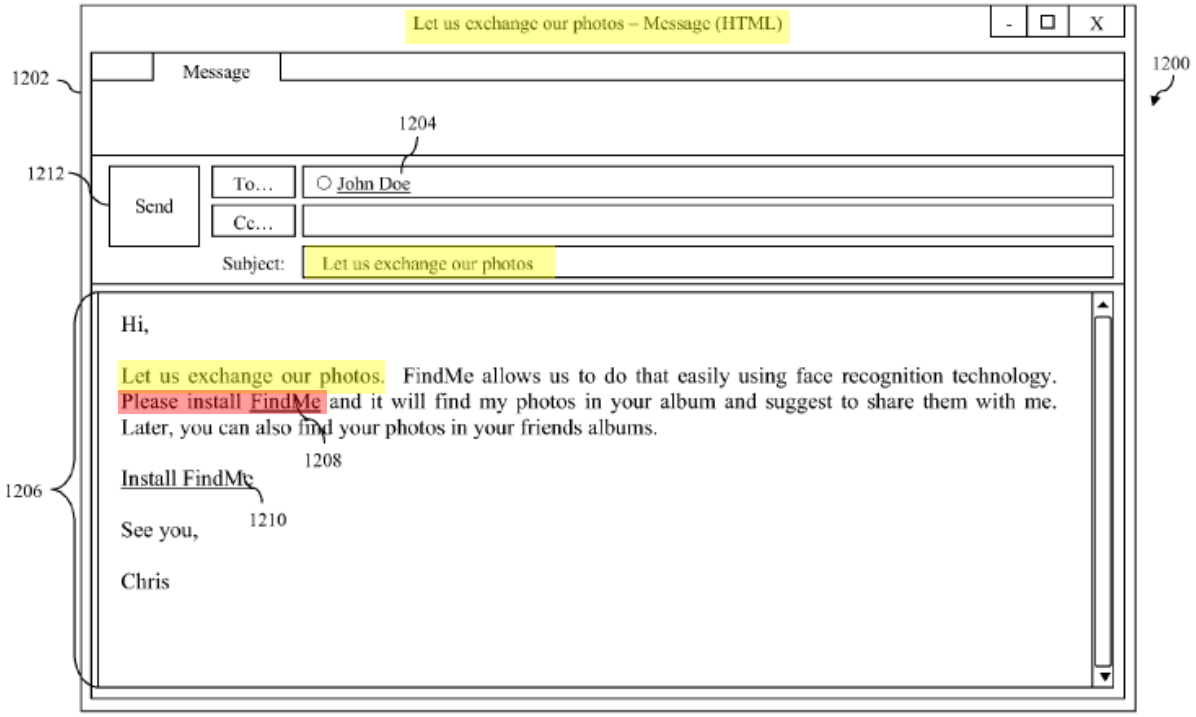


FIG. 12
(Annotated)

A POSA would have understood an e-mail inviting another user to exchange photos ("Let us exchange our photos") to be "*an invitation*" to exchange photos that

the user can accept by downloading the image finding/sharing software ("referred to in the e-mail as 'FindMe,'") per the request to "Please install FindMe" (Krupka, [0084]-[0085]). Turk, ¶ 253.

Krupka calls this process an "invite" to share images and face models (Krupka, [0069]). Turk, ¶ 254. Only after accepting the invitation by downloading the image finding/sharing software ("FindMe")—thereby establishing "*the relation*" claimed—can the shared/received face model be utilized. *Id*.

15. Claim 14

Claim 14 depends from claim 1 and recites "*the relation is established based on contact information of the third party being present in a contact database of the user*." A POSA would have understood that both contacts from an "address book," and "contacts with ***whom the user is connected***" via a social networking service displayed in Krupka's "Choose Contact" window (below) meet *"contact information"* that is *"present in a contact database*." Krupka, [0083]; Turk, ¶ 255.

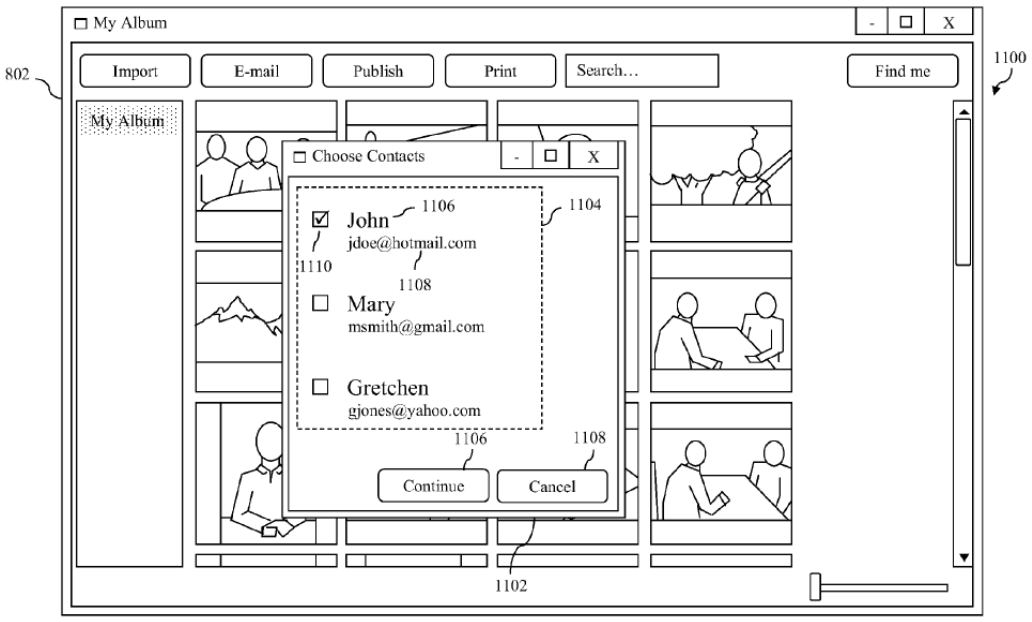


FIG. 11

Furthermore, a POSA would have understood that a contact ("*user*") of the person that sends an e-mail invite (*"third party"*) to this contact "with whom the ***user is connected***" would also have the third party listed in his/her contact database via this service. Krupka, [0083]; Turk, ¶ 256.

16. Claim 15

Claim 15 depends from claim 1 and recites "*the at least one option for sharing images includes an option for displaying sharing suggestions based on the face recognition information and the second set of images is displayed as the sharing suggestions*…[antecedent language from [1K] of claim 1]." The "Pictures Found" window meets this limitation. Turk, ¶ 257.

Specifically, the "Pictures Found" window displays images found on a user's device using a shared/received face model along with multiple options to share.

Turk, ¶ 258; §V.A.2.c(1)(i). A POSA would have understood that the displayed images are "*share suggestions*" ("Would you like to share them?") since sharing of the displayed images is not compulsory. *Id*. Claim 15 indeed recites that the displayed images ***are*** the sharing suggestions.

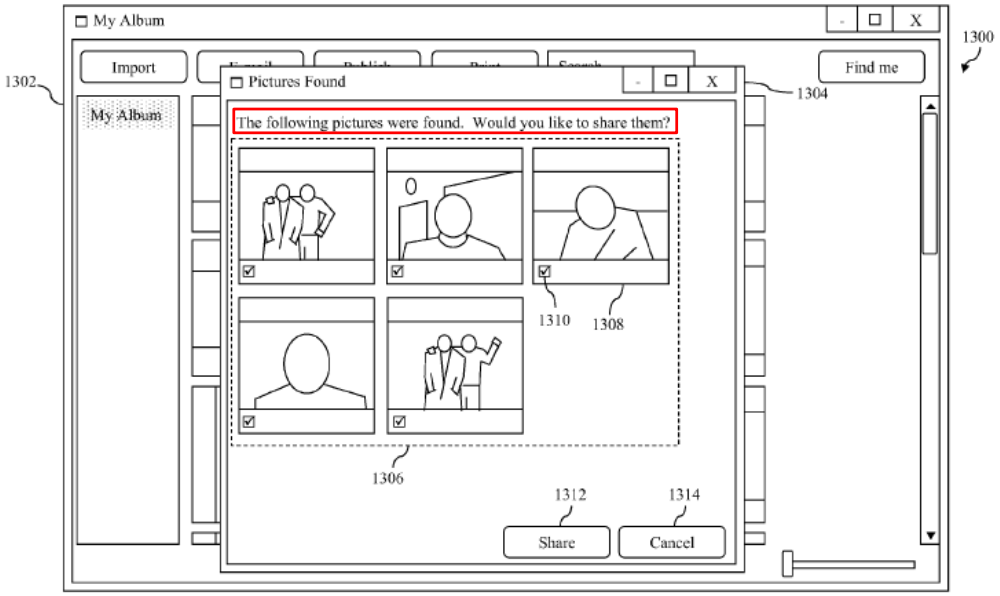


FIG. 13

Additionally, Krupka discloses that the software may present the found images with all of the checkboxes checked, providing a suggestion to share each of the images displayed. Turk, ¶ 259. The remainder of claim 15 repeats the antecedent language from [1K] in claim 1. §V.A.2.c(4).

17. Claim 16

Claim 16 depends from claim 1 and recites "*that the one or more of the second set of images is caused to be shared with the third party.*" Krupka's disclosure that "[w]hen share button 1312 is activated by a user of second user computer 104, the

checked images appearing in set 1306 will be shared with the first user" (Krupka, [0091]) meets claim 16 because the first user is the user that created/shared his/her face model (i.e., "*the third party"*). Krupka, [0088]-[0091]; Turk, ¶ 260.

18. Claim 17

Claim 17 depends from claim 1 and recites that "*the user input in connection with the at least one of the second set of images includes a deselection of at least a portion of the second set of images, where the second set of images are selected by default.*"

Krupka's "Pictures Found" window displays a checkbox for each found image, and Krupka discloses that "the image sharing module executing on second user computer 104 ***checks each check box by default*** and a user of second user computer 104 can ***selectively un-check check boxes associated with certain images***." Krupka, [0090]. The user deselecting one or more checkboxes checked by default meets claim 17. Turk, ¶ 262.

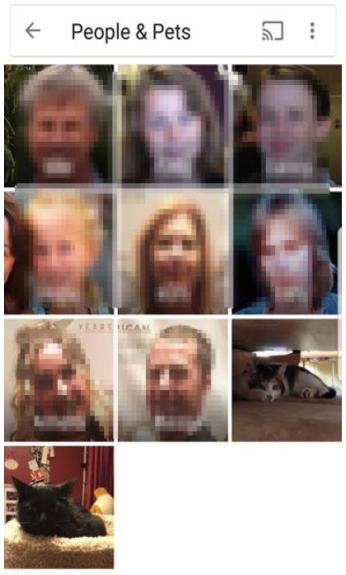
19. Claim 18

Claim 18 depends from claim 1 and further recites "*that the plurality of indicia"*—the human faces displayed in Krupka's GUI discussed in §V.A.2.b(1)—*"include a plurality of face icons of a face recognition home screen.*"

A POSA would have understood a "*face icon*" to refer to a selectable representation of a face. Turk, ¶ 264 (citing Newton's Telecom (Ex. 1016), 363).

Krupka's GUI displays "***portions*** of digital images" of "human faces," (Krupka, [0041])—*i.e.*, thumbnails of human faces from which the user can "select those portions that represent his/her face" (*id.*). Turk, ¶ 264. Thus, a POSA would have understood that each image portion depicting a human face is a "face icon" because it is a selectable representation of a face. *Id.*

This is consistent with Boccone's infringement contentions (screen-shot below), in which the "*plurality of face icons*" is allegedly met by displaying portions of images depicting the faces of people/pets. Ex. 1009, 51; Turk, ¶ 265.



The '726 patent uses the term "*home screen*" in claim 18 but nowhere else. The incorporated '946 application uses this term to describe a screen from which other functionality may be accessed. *See e.g.*, Ex. 1008, FIG. 5 ("Home"). This use is consistent with the conventional meaning of "*home screen*" as a screen from which

commonly used or related functionality could be accessed, in this case face recognition functionality. Turk ¶ 266.

A POSA would have understood Krupka's *face model building* GUI that displays thumbnails of human faces so that a user can tag faces to build face models to be a "*face recognition home screen,*" at least because Krupka's face model building module presents this GUI as a starting screen from which the face model building process proceeds, and from which image finding/sharing functionality can be accessed. Turk, ¶ 267.

Claim 18 further recites that "*the at least one option is accessible via a configuration interface element separate from the face recognition home screen.*" The '726 patent does not use the term "*configuration interface element*" (nor anything like it) and so provides no guidance on the meaning of this term. Turk, ¶ 268.

As discussed in §V.A.2.c(1)(i), the "Pictures Found" window provides the claimed "*at least one option,*" and the share options this window provides are accessible via a search tool provided to allow users to find photos using shared/received face models (Krupka, [0064]), both interface elements of which are separate from Krupka's face model building GUI meeting the "*face recognition home screen*." Turk, ¶ 269.

Krupka discloses that the search tool provides "a data entry box" (Krupka, [0064]) in which a user can enter a name or select a name from "a menu of user names" (*id.*) to cause the search tool to execute a search for photos of that user. Turk, ¶ 270. A POSA would have understood either GUI element to meet the claim "*configuration interface element*," because both are interface elements that configure the search tool to search for photos of the particular user chosen for display in the "Pictures Found" window. *Id*. As both configuration elements are also separate from Krupka's face model building GUI, Krupka meets each limitation in claim 18. *Id.*

20. Claim 19

Claim 19 depends from claim 1 and recites that the instructions cause the device to access a server to accomplish limitations in claim 1. Krupka's server-based embodiment meets each limitation in claim 19.

a. [19A] "wherein the instructions are configured to cause the device to access at least one server for:

Krupka's discloses a "server-based system" in which "***a portion or <u>all</u> of the functionality*** provided by each image finding/sharing module" is "provided by ***one or more remote servers*** that are ***<u>communicatively connected</u> to each user computer***." Krupka, [0016], [0071]. This functionality is provided by the "server image finding/sharing module" (Krupka, [0071]-[0072]) and accessed by a "network

access module" (*id.*) installed on each user device, as shown in FIG. 7 below. Turk, ¶ 272.

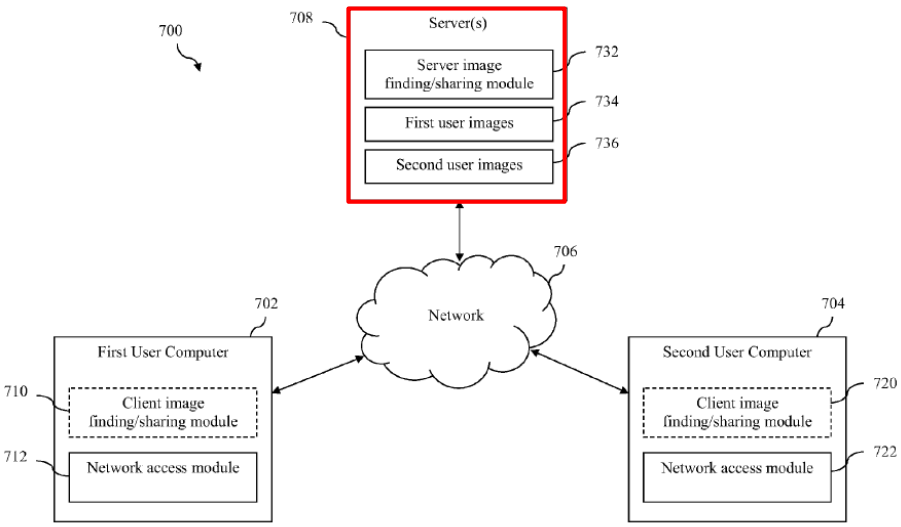


FIG. 7

This server-based system meets limitation [19A] because the user devices can access the server image finding/sharing module to perform ***all*** of the functionality of this software, which includes the functionality recited in elements [19B], [19C], [19D], which simply recite that the device accesses "*at least one server*" to accomplish claim 1's limitations [1E]-[1K]. Turk, ¶ 273.

b. [19B] "*receiving at least one web page to cause the device to display the plurality of indicia, the first set of images, the second set of images, and the at least one option for sharing images*"

In [19B] "*at least one web page*" causes the device to perform claim 1's display limitations [1E], [1G], [1H], and [1I], each of which is performed by

Krupka's image finding/sharing software as discussed in §§V.A.2.b(1), V.A.2.b(3), V.A.2.c(1)(i), and V.A.2.c(2). Because Krupka's server-installation of this software can instruct performance of "***all*** of the functionality," Krupka's server causes the user device to meet these display limitations when the user device accesses this server functionality. Krupka, [0071]-[0072]; Turk, ¶ 274.

Regarding "*receiving at least one web page to cause the device*" to perform these elements, Krupka's network access module in each user device that invokes the server's functionality is disclosed as comprising a "Web browser." Krupka, [0033]. To the extent that Krupka does not explicitly describe the server image finding/sharing module providing its functionality via a website/web page, it would have been obvious to implement Krupka's server-based system via a website wherein the user device accesses the server image find/sharing module ([0072]) via the network access module's "Web browser" ([0033]), as this was a conventional and routine way to enable a device to access server-based software via a network. Turk, ¶ 275.

c. [19C] "*wherein the at least one web page further permits the receipt, by the device, the user input in connection with the at least one indicia and the user input in connection with at least one of the second set of images*"

In [19C], "*the at least one web page further permits the receipt, by the device,*" of claim 1's user input limitations [1F] and [1J], each input limitation of which

relates to subject matter displayed by the image finding/sharing module, as discussed in §§V.A.2.b(2) and V.A.2.c(3). In Krupka's server-based system that performs "***all*** the functionality," the receipt of this input is permitted by what the "*at least one web page"* provides for display on the user device when it accesses the server image finding/sharing module. Turk, ¶ 276.

d. [19D] "*where the sharing of the one or more of the second set of images is caused by sending a signal from the device to the at least one server*."

Limitation [19D] recites that "*the sharing of the one or more of the second set of images*" recited in claim 1's limitation [1K] "*is caused by sending a signal from the device to the at least one server*."

In Krupka, this sharing is caused by activation of the share button in the "Pictures Found" window as discussed in §V.A.2.c(4), so that in Krupka's server-based system this sharing happens when activation of the share button by the user is signaled to the server to cause the server to share the checked photos in the "Pictures Found" window. Turk, ¶ 278.

21. Claim 20

Claim 20 depends from claim 1 and further recites that the "*at least [sic] option is capable of being enabled, for permitting the face recognition information, that is based on the third party input, to be utilized for the benefit of the user by displaying, as sharing suggestions, the second set of images, so that the user is*

capable of sharing, with the third party and conditionally based on user control, the one or more of the second set of images that are previously accessible only via the device of the user."

Claim 20 merely requires that the "*face recognition information"* utilized in claim 1 "*benefit*" the user by displaying the "*second set of images*" as "*sharing suggestions*" so that the user controls which of his/her images to share with the third party. Turk, ¶ 280. This is precisely what Krupka's "Pictures Found" window does, which can be "*enabled*" by downloading Krupka's image finding/sharing software (Krupka, [0085]) and/or by choosing to display found images before sharing (Krupka, [0057]). *Id*.

Specifically, Krupka's "Pictures Found" window suggests pictures (i.e., "*sharing suggestions*" per §V.A.16) found in photos "owned or managed" (Krupka, [0088]-[0091]) by the second user using the face model received from the first user that the user can choose to share with the first user. *Id.*; Turk, ¶ 281. Krupka explains that the "*benefit*" of this face model sharing is that a user can obtain photos that the user ***previously had no access to***. Krupka, [0004]-[0007]; Turk, ¶ 281.

22. Claim 21

Claim 21 depends from claim 1 and recites the limitations of claim 20 but requires that displaying the images as share suggestions occurs "*without a prior*

visible indication being received by the user indicating a sharing of the face recognition information by the third party."

As discussed in §V.A.2.c(1)(iii), a face model can be shared when a user downloads the image finding/sharing software in response to an e-mail inviting the user to exchange photos. Turk, ¶ 283. This e-mail invitation does not provide any visible indication that a face model is being shared, which happens by virtue of the user downloading the software. *Id.*

This e-mail invitation simply states that "FindMe" allows photos to be exchanged "using face recognition technology" (FIG. 12), but it does not provide any visual indication that a face model will be shared, nor does the e-mail share a face model in this embodiment. Turk, ¶ 283. The "Pictures Found" window is displayed after the image finding/sharing module has been downloaded without any prior visual indicator of the face model being shared. *Id.*

To the extent that the e-mail invitation can be interpreted as a visual indication of sharing a face model (on which the '726 patent is completely silent), Krupka also discloses that users can utilize face models of users invited by ***others*** who they may not even know (Krupka, [0065]-[0070]), in which case such a face model is "*utilized*" with "*no prior visible indication received by the user indicating a sharing"* of the face model, and Krupka meets claim 21 for this additional reason. Turk, ¶ 284.

23. Claim 22

Claim 22 depends from claim 1 and recites a list of alternatives (see the "or" before the last alternative), only "at least one" of which must be met. Element [22A] recites that "the device includes a mobile device." Krupka discloses implementing its system in a mobile device. Krupka, [0028] ("smart phone"), [0092] ("mobile computer"). Krupka thus meets claim 22. Turk, ¶ 285.

24. Claim 23

Independent claim 23 recites an "*apparatus*" that includes essentially the same components as the "*device*" in claim 1 and is configured in substantially the same way. Turk, ¶ 286. A POSA would have understood that each of Krupka's user computers (i.e., the "*device*" of claim 1) is also an "*apparatus*." *Id*. Claim 23 also uses the term "*input device*" instead of "*input mechanism*," which is met by Krupka's ***expressly*** disclosed "input device" (Krupka, [0040]). *Id*.

Additionally, claim 23 recites user input "*on*" the claimed indicia in [23F] instead of "*in connection with*" the indicia in [1F]. Krupka's selection of displayed human faces "that represent his/her face" (Krupka, [0041]) meets user input "on" the plurality of indicia for the same reasons Krupka meets "*in connection with*," discussed in §V.A.2.b(2). Turk, ¶ 287.

Similarly, claim 23 recites user input "*on at least one of the second set of images"* [23J] instead of "*in connection with*" as recited in [1J]. Krupka's "Pictures

Found" window (below) displays a "set of images 1306" (Krupka, [0088]) as thumbnails with checkboxes for selecting/deselecting. Krupka, [0088]-[0091]. Thus, user input in connection with any checkbox is performed "*on*" at least one of the "set of images 1306" that meets [23J]. Turk, ¶ 288.

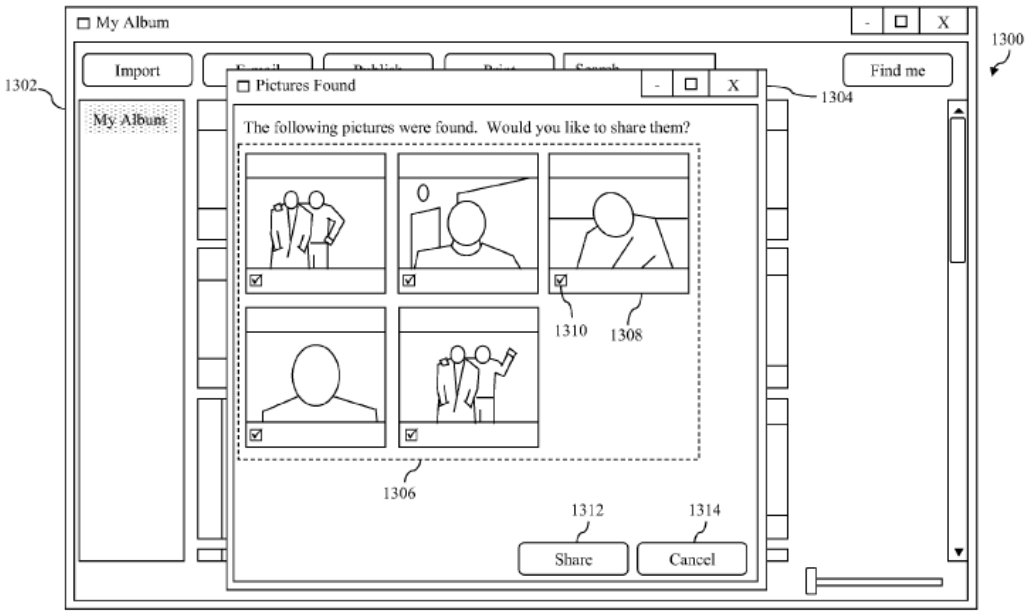


FIG. 13

To the extent claim 23 is interpreted as requiring direct input on an image, a POSA would have inferred from the way that these thumbnails and checkboxes are presented in Krupka, that clicking on the thumbnail would toggle the checkbox or, alternatively, toggling the checkbox by selecting the thumbnail would have been an obvious way to implement Krupka's interface. Turk, ¶ 289.

Selection/deselection of an image by selecting a thumbnail was a known technique (*see e.g.*, selecting the query image in Perlmutter, 30:40-5, FIG. 13) and was the routine and conventional way to select a photo. Implementing Krupka's

"Pictures Found" window to choose images by selecting the thumbnail would have been merely the use of a known technique to yield the predictable result of providing a convenient way to select/deselect images for sharing. Turk, ¶ 290; *KSR* *416.

Furthermore, claim 23 recites "*provide access to at least one feature for displaying images for sharing*," [23H] instead of "*display, utilizing the screen of the device, at least one option for sharing images*," in [1H]. This limitation is met for the same reasons discussed for claim 1 in §V.A.2.c(1)(i). Additionally, limitation [23H] recites that the third party input is in "association with at least one face ***for correlating the at least one face with the third party***." Krupka discloses this limitation for the same reasons discussed for claim 12 in §V.A.13. *See also* §§V.A.9-V.A.11 for claims 8-10 demonstrating the correlation between the at least one face and the third party. Turk, ¶ 291.

Claim 23 recites that the one or more of the second set of images is "*shared with the third party*" [23K]. Krupka discloses this limitation for the same reasons discussed for claim 16 in §V.A.17. Turk, ¶ 292.

The remainder of limitations [23A]-[23K] in claim 23 recite the subject matter of the corresponding limitations [1A]-[1K] in claim 1 and are met by Krupka for the same reasons disclosed in the corresponding sections shown in the table below. *Id*.

Claim 23 Element	Corresponding Claim 1 Element(s)	Section
[23PRE]	[1PRE]	§V.A.2.a
[23A]	[1A]	§V.A.2.a(1)
[23B]	[1B]	§V.A.2.a(2)
[23C]	[1C]	§V.A.2.a(3)
[23D]	[1D]	§V.A.2.a(4)
[23E]	[1E]	§V.A.2.b(1)
[23F]	[1F]	§V.A.2.b(2)
[23G]	[1G]	§V.A.2.b(3)
[23H]	[1H]	§V.A.2.c(1)
[23I]	[1I]	§V.A.2.c(2)
[23J]	[1J]	§V.A.2.c(3)
[23K]	[1K]	§V.A.2.c(4)

25. Claim 24

Claim 24 depends from claim 23 and recites that "*the relation is established based on one or more previous communications with the third party.*" Krupka discloses that the "Choose Contact" window (FIG. 11) lists "contacts with whom the ***user is connected***" via a social networking service. Krupka, [0083]. A POSA would have understood that because the user and the listed contact are connected, the parties would have had at least one previous communication to establish this connection via the service. Turk, ¶ 293. *See also* §V.A.2.c(1)(iii).

26. Claim 25

Claim 25 depends from claim 23, recites the same limitations as claim 20, and is therefore met by Krupka for the reasons discussed in §V.A.21. Turk, ¶ 294.

27. Claim 26

Claim 26 depends from claim 23, recites the same limitations as claim 21, and is therefore met by Krupka for the reasons discussed in §V.A.22. Turk, ¶ 295.

28. Claim 27

Independent claim 27 recites [27PRE] a "*computer-implemented method*" comprising [27A] "*providing access to at least one server utilizing an apparatus*" that comprises the same conventional computer components of the device/apparatus recited in claims 1 and 23 ([1A]-[1D], [23A]-[23D]). Claim 27 further recites "*communicating with the at least one server such that the apparatus is configured to*" perform the identical steps recited in claim 23 ([23E]-[23K]), each of which is demonstrated as being obvious over Krupka (§§V.A.2 and V.A.24 *supra*). Turk ¶ 296.

Krupka discloses communicating with at least one server such that the user's device (*i.e.*, "*the apparatus*") performs each of the limitations recited in claim 27 for the same reasons discussed in connection with claim 19 in §V.A.20. Turk, ¶ 297. Specifically, Krupka's server-based system (FIG. 7) provides "***all of the functionality***" of the image finding/sharing module. *Id*.

Because the server(s) can provide ***all*** of the functionality of the image finding/sharing software and this software discloses all of the functionality recited in claim 27 for the same reasons it discloses these limitations in claims 1 and 23,

Krupka discloses each and every limitation of claim 27. Turk ¶ 298; §§V.A.2, V.A.24 and V.B.4.

29. Claim 28

Claim 28 depends from claim 27, recites the same further limitations as claim 20, and is therefore met by Krupka for the same reasons discussed in §V.A.21. Turk, ¶ 299.

30. Claim 29

Claim 29 depends from claim 27, recites the same further limitations as claim 21, and is therefore met by Krupka for the same reasons discussed in §V.A.22. Turk, ¶ 300.

31. Claim 30

Claim 30 depends from claim 27 and recites substantially the limitations of claim 24, and those are met by Krupka for the reasons discussed in §V.A.25. Turk, ¶¶ 301-302. Claim 30 further recites "*the plurality of indicia is a grid of face interface elements*." Krupka does not expressly disclose the precise manner in which thumbnails of human faces are displayed, but a grid arrangement would have been an obvious way to do so, as this was a conventional and routine way to display thumbnail images, for example, as disclosed in FIG. 8 of Gokturk (left) and FIG. 13 of Perlmutter (right). *Id.*

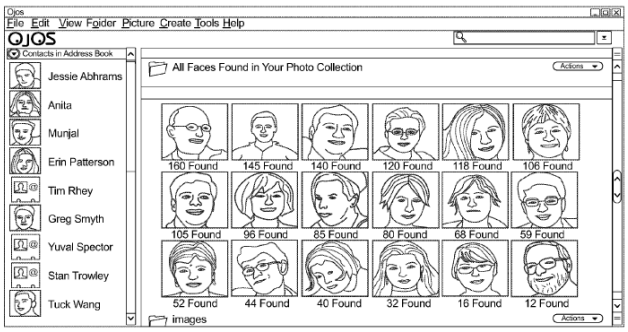


FIG. 8

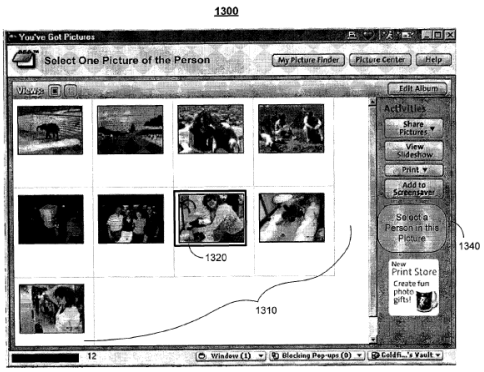


Fig. 13

B. Ground 2: Claims 1-30 Would Have Been Obvious Over the Combination of Perlmutter and Krupka

1. Perlmutter (Ex. 1006)

Perlmutter issued on August 24, 2010, and is §102(b) prior art. Perlmutter was not considered during prosecution.

Perlmutter uses face recognition to find/organize photos. A user's photos are displayed and the user can select a face of a person the user would like the system to find more photos of—this selected face is referred to as a "query face." Perlmutter, 11:1-12:60; 19:24-21:42; 30:23-67; Turk, ¶ 325. The user can tag the query face to identify the person (e.g., "Stephanie"). *Id.*

Perlmutter builds a "face feature vector" from the query face, and uses the query face to "search for other images in the photo album that include a face that is the same as the query face" (Perlmutter, 31:1-3). Turk, ¶ 326; Perlmutter, 31:1-32:58, FIGS. 15-19. Search result images that match the query face are displayed to the user (e.g., so the user can provide feedback to improve the face feature vector), and stored in a folder labeled with the name assigned to the query face. *Id.*

Perlmutter uses "face feature vector" to refer to what Krupka refers to as a "face model," both terms being described as comprising a set of features representing a particular face (*compare* Perlmutter, 11:66-12:14, *with* Krupka, [0039]). Turk, ¶ 327. The term "face model" is used hereinafter to refer to both sets of features representing a face (*i.e.,* Perlmutter's "face feature vectors" and Krupka's "face models"), as they both describe the same or equivalent types of information that can be used to find photos of a corresponding face. *Id*.

2. Motivation to Combine Perlmutter and Krupka

Perlmutter describes an example of a conventional photo finding and sharing system, like the Picasa™ software described in Krupka's Background (Krupka, [0002]), that allows a user to build a face model of a person to find and display additional photos of that person in the user's photo collection. Perlmutter, 30:40-31:58; Turk, ¶ 328.

A POSA would have recognized from Krupka's disclosure that Perlmutter's system would have had the shortcoming identified in Krupka ([0003]-[0004]) that "digital images of a user and his/her family members that are located in albums ***belonging to others***" cannot be found and shared unless other users repeat the face model building process for each person for which a user is interested in obtaining photos (*id.*). Turk, ¶ 329.

Thus, a POSA would have been motivated to use Krupka's techniques for ***sharing*** face models and photos in Perlmutter's system so that Perlmutter's face models can be used to not only find photos in one's own photo collection, as disclosed in Perlmutter, but ***also*** to find and share photos in photo collections belonging to others, as expressly taught by Krupka. (Krupka, [0004]-[0007]); Turk, ¶ 330.

3. Implementing Perlmutter-Krupka

A POSA implementing the Perlmutter-Krupka system to share Perlmutter's face models so that photos can be found and shared from photo collections belonging to others, as taught by Krupka, would have applied Krupka's face model and photo sharing techniques (Krupka, [0050]-[0091], *see e.g.*, §§V.A.1.b and V.A.2.c) to Perlmutter's face models created using the process implemented by Perlmutter's software (Perlmutter, 30:23-37:35, FIGS. 12-19). Turk, ¶ 331.

The Perlmutter-Krupka system would therefore have been configured to create face models to find/display/organize corresponding photos from a user's album, as taught by Perlmutter (Perlmutter, 30:23-37:35), and configured to share resulting face models so that photos can be found and shared from photo collections belonging to others, as taught by Krupka (Krupka, [0004]-[0007], [0050]-[0091]). Turk, ¶ 332.

Specifically, a POSA would have implemented Perlmutter-Krupka so that Perlmutter's system included relevant functionality of Krupka's image finding/sharing module to improve Perlmutter's system with the benefits of sharing face models. *Id*.

Implementing Perlmutter-Krupka would have been within a POSA's capabilities, and a POSA would have had a reasonable expectation that the implementation would work successfully. Turk, ¶ 333. Krupka discloses that the image finding/sharing module may be implemented as a "plug-in module" of an ***existing*** photo management application (Krupka, [0074]), or installed as a server image finding/sharing module accessible by user devices via a network (Krupka, [0071], [0072]), either of which would have been within a POSA's capabilities to implement with a reasonable expectation of success. *Id.*

4. Claim 1

In Perlmutter-Krupka (§V.B.3), Perlmutter's GUI implementation that allows a user to select a query face to find and display other photos of that face in a user's photo album meets [1E]-[1G], and Krupka's image finding/sharing software implemented to share Perlmutter's face models so that photos of a face associated with a shared/received face model received from another device can be found and shared meets limitations [1H]-[1K] for substantially the same reasons discussed in §V.A.2.c *supra*, as further discussed below. Turk, ¶¶ 334-335.

a. Perlmutter-Krupka Discloses Limitations [1A]-[1D]

Both Perlmutter and Krupka disclose techniques that are implemented in software executing on conventional computing devices. Perlmutter, 37:53-38-20; Krupka, [0028], [0092]-[0101]; Turk, ¶ 336. A POSA would have understood that Perlmutter-Krupka can be implemented on any such computing device, either those described by Krupka or Perlmutter. Thus, Perlmutter-Krupka implemented on any of the Krupka devices meets limitations [1A]-[1D] for the reasons discussed in §V.A.2.a. Turk, ¶ 336.

b. Perlmutter-Krupka Discloses Limitations [1E]-[1G]

(1) *[1E]* – Ex. 1001, 71:58-60

To allow a user to select a "query face" from which a face model is created to find other photos in a user's album, Perlmutter displays thumbnails of photos from the user's photo album, as shown in the GUI of FIG. 13, reproduced below (*see also* "My Album" in FIG. 12). Perlmutter, 30:23-50; Turk, ¶ 337.

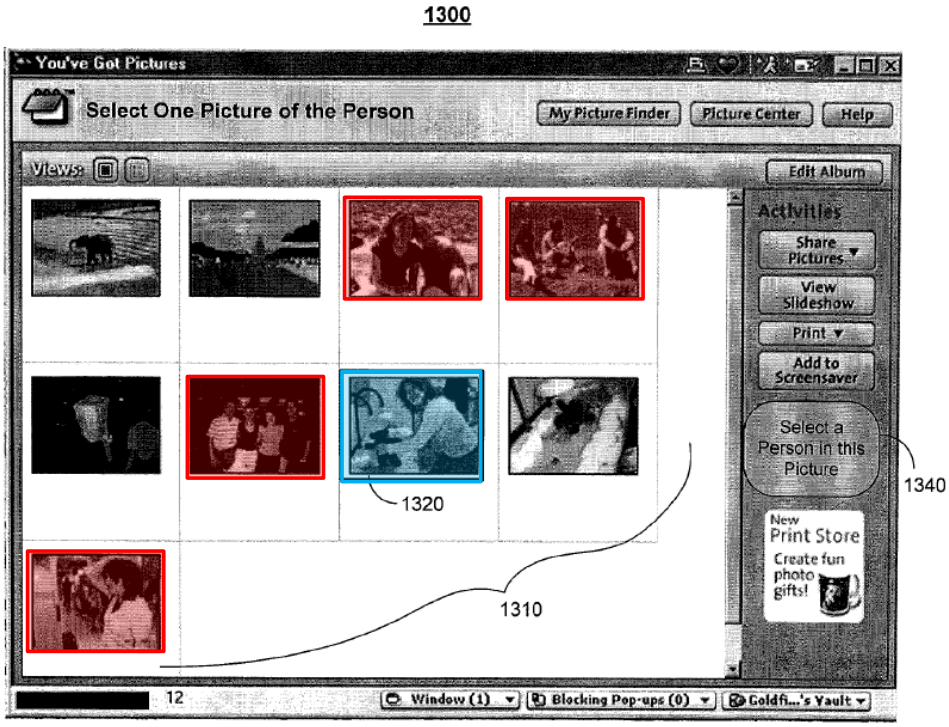


Fig. 13

Each thumbnail (highlighted in red and blue) displayed on the user's device includes at least one face and, as shown by the user's selection of image 1320 highlighted in blue (Perlmutter, 30:46-47), are selectable visible interface elements, any two or more of which meet the claimed *"display, utilizing the screen of the device, a plurality of indicia each including at least a portion of an image including a face*" in [1E]. Turk, ¶ 338.

(2) *[1F] – Ex. 1001, 71:61-64*

Perlmutter discloses that "the user may select an image, such as image 1320, as a query image" (highlighted in blue above) and may "select a face within the query image" "to serve as a query face" (Perlmutter, 30:47-61) to "initiate a search

for images that include faces that are the same as the query face" (Perlmutter, 31:1-3). Turk, ¶¶ 339-340. Thus, the user selecting the query image containing the query face from the displayed thumbnails via Perlmutter's GUIs meets "*receive, utilizing the input mechanism of the device, a user input in connection with at least one of the indicia including at least a portion of a first image including a first face*" in [1F]. *Id.*

(3) *[1G] – Ex. 1001, 71:65-72:2*

Perlmutter discloses that the query face is used to "search for other images in the photo album that include a face that is the same as the query face" (Perlmutter, 31:1-3). Turk ¶ 341. Perlmutter's FIG. 15, reproduced below, illustrates a GUI that "presents search result images" to the user (Perlmutter, 31:8-13). *Id.*

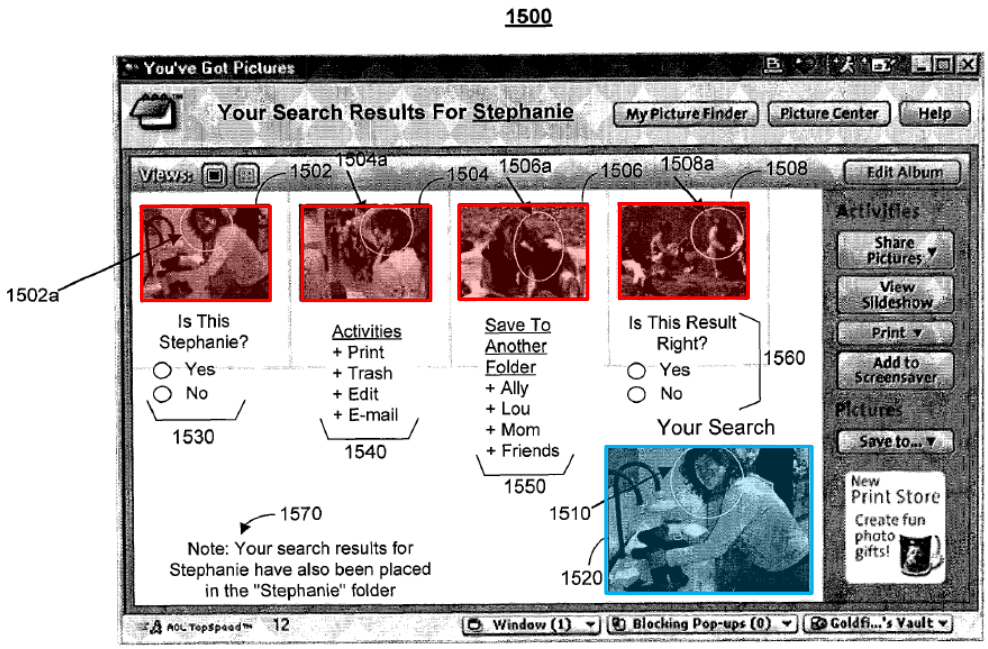


Fig. 15

These displayed images from the user's photo album that "include faces that are the same as the query face" (Perlmutter, 31:10-13) are thus "*a first set of images each including the first face that has been recognized in at least one of a plurality of images accessible via the device*," that are displayed via the GUI on the user's device so that Perlmutter-Krupka meets [1G]. Turk ¶ 342.

c. Perlmutter-Krupka Discloses Limitations [1H]-[1K] – Ex. 1001, 72:3-32

Perlmutter's face models meet the claimed "face recognition information" for the same reasons that Krupka's face models do—both describe information representing features of a particular face that can be used to find images containing that face. Turk, ¶ 343; §§V.B.1, V.A.2.c(1)(ii). Per above (§V.B.2), a POSA would have been motivated to share Perlmutter's face models so that photos can be found and shared from photo collections belonging to others, as taught by Krupka. *Id*. To do so, Perlmutter-Krupka (§V.B.3) uses the aspects of Krupka's image finding/sharing software to share and receive Perlmutter's face models and images found using those face models. *Id*.

The Perlmutter-Krupka combination using Krupka's email invitation and request to download the image finding/sharing software to share and receive Perlmutter's face models, and using Krupka's "Pictures Found" window to display and share images found using face models received from another device meets

limitations [1H]-[1K] for the same reasons discussed in §V.A.2.c in connection with Krupka alone. Turk, ¶ 344. Thus, claim 1 is also obvious over Perlmutter-Krupka.

5. Claims 2-5

Claim 2 is obvious over Perlmutter-Krupka for substantially the same reasons discussed in §V.A.3, except that limitations [2D] and [2E] are met by Perlmutter-Krupka because Perlmutter discloses a user selecting a query image containing a query face from the user's photo album (Perlmutter, 30:47-61; §V.B.4.b *supra*), and the "*third set of images*" ([2F]) is met by Perlmutter-Krupka because Perlmutter discloses that the query face is used to find photos that include the same face (Perlmutter, 31:1-19; §V.B.4.b *supra*.). Turk, ¶¶ 345-346. The remaining limitations in claim 2 are met by Perlmutter-Krupka for the same reasons discussed in §V.A.3. *Id.*

Claim 2 is obvious in view of Perlmutter-Krupka for the additional reason that FIGS. 13 and 15 of Perlmutter display a "Shares Pictures" element (highlighted in yellow below) that also meets the "*additional option to share images*" recited claim 2.

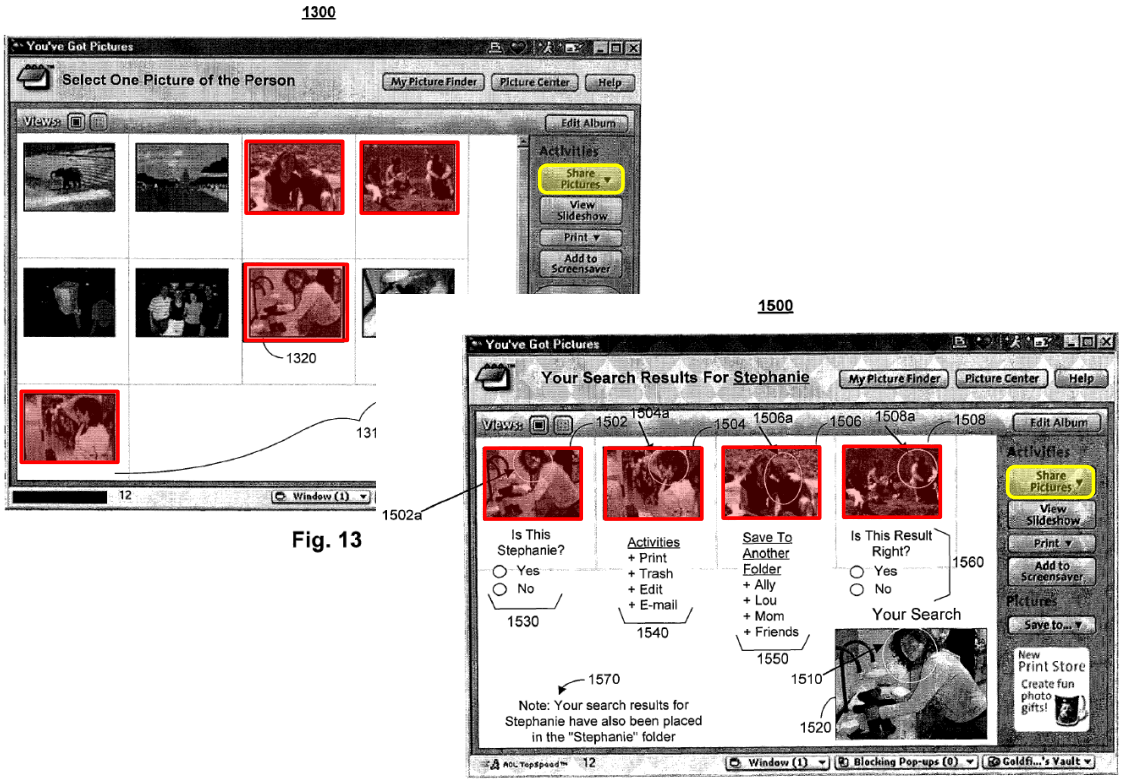


Fig. 13

Fig. 15

A POSA would have had reasons to implement Perlmutter-Krupka such that Perlmutter's "Share Pictures" interface element invoked Krupka's options for sharing found images to allow a user to conveniently share found images matching the query face from the same GUI in which those found images are displayed. Turk, ¶¶ 347-348. Thus, this Perlmutter-Krupka "Share Pictures" option provides an additional way to access Krupka's share options (i.e., an "*additional option to share images*") that meets limitation [2A], so that Perlmutter-Krupka renders claim 2 obvious for this additional reason. Turk, ¶ 349-350.

Claims 3-5 depend from claim 2 and are obvious over Perlmutter-Krupka for the reasons just discussed for claim 2 and for those reasons discussed in §§V.A.4-V.A.6. Turk, ¶ 351.

6. Claim 5

Perlmutter's FIG. 19 GUI (below) organizes photos into folders labeled with the name with which the user tagged the query face used to find photos of the same face. Perlmutter, 30: 62-67, FIG. 14 (query face assigned the name "Stephanie"), 36:26-37; Turk, ¶¶ 353-354.

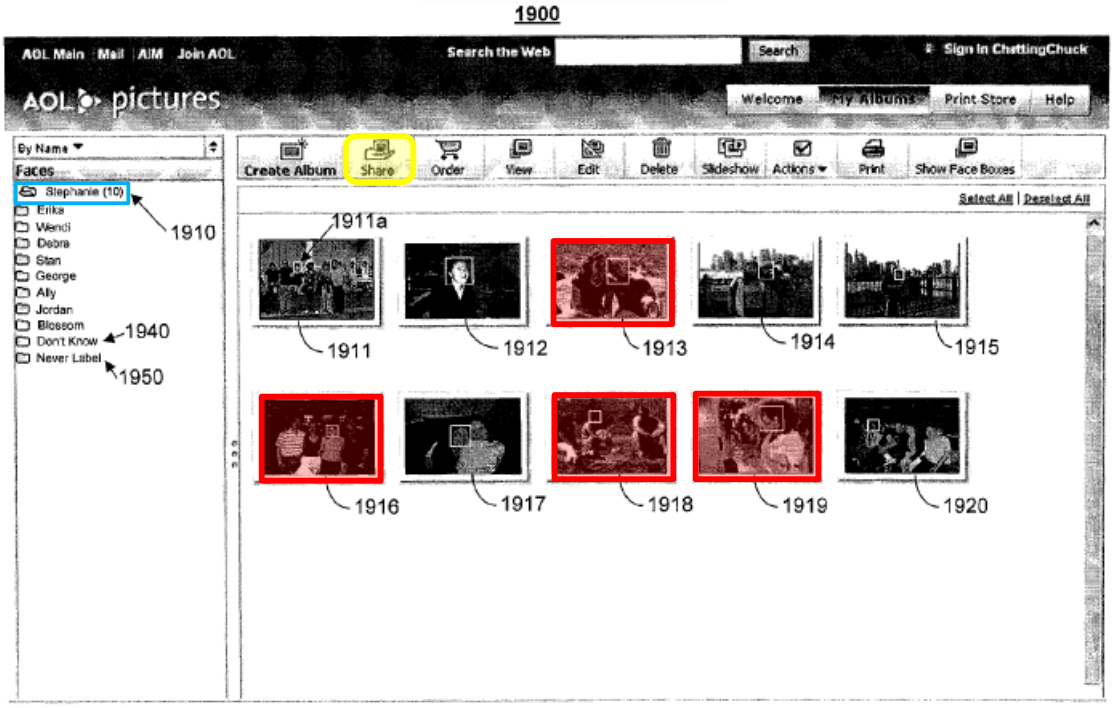


Fig. 19

Tags are displayed as folder labels and, as shown by thumbnails highlighted in red above in the open "Stephanie" folder, the "*plurality of indicia*" from which the user selected the query image with Stephanie's face are displayed along with

all of the photos of Stephanie's face (i.e., a "*face screen*") and so are "*part of a face screen*" and "*the tags are displayed with the plurality of indicia*," as recited in claim 5. Turk, ¶¶ 354-356.

Also, FIG. 19 is "*configured to receive tags"* because Perlmutter discloses that the user can "assign[] a different name to … a face by, for example, right clicking on the face" via the FIG. 19 GUI. Perlmutter, 37:31-35; Turk, ¶ 356.

FIG. 19 further displays a "Share" button (highlighted in yellow). A POSA would have had reasons to implement Perlmutter-Krupka such that Perlmutter's "Share" button invoked Krupka's option for sharing found images to allow a user to conveniently share images from the corresponding folder. Turk, ¶ 357. By linking this "Share" button to Krupka's share option, this "*additional option to share images*" meets each limitation in claim 2 and, by being displayed "*in connection with*" the tags, Perlmutter-Krupka also meets each limitation in claim 5. *Id*.

7. Claims 6-30

Claims 6-30 are obvious over Perlmutter-Krupka for the same reasons discussed in V.A.7-V.A.31. Turk, ¶ 358. Claim 30 is obvious over Perlmutter-Krupka for the additional reason that Perlmutter displays the thumbnail images in FIG. 15 (i.e., "*the plurality of indicia*") as "*a grid of face interface elements.*" *Id*.

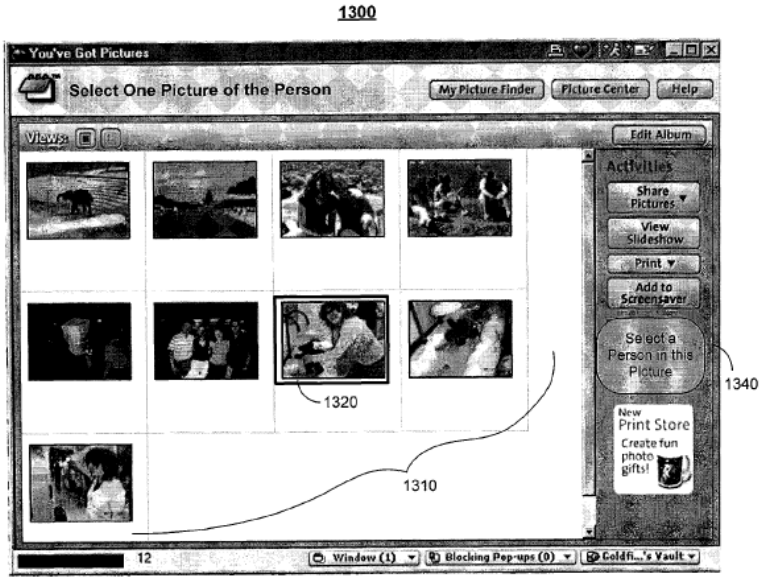


Fig. 13

VI. NO BASIS FOR DISCRETIONARY DENIAL

None of the art presented in this Petition was before Office during prosecution thus no basis exists to deny institution under 35 U.S.C. § 325(d).

Discretionary denial is also unwarranted under 35 U.S.C. § 314(a) because parallel litigation is not at an "advanced state." *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8, at 20 (Sep. 12, 2018).

No trial date is set, and the other currently-scheduled dates may be upended by the court's ruling on pending transfer-of-venue motions, a hearing on which has yet to occur. Ex. 1017, 5; Ex. 1018, 5; Ex. 1019, 4 (No. 46); Ex. 1020, 5 (No. 51).

Moreover, courts often extend deadlines "for myriad reasons" and "have the ability to stay their proceedings" including "after the Board has decided to institute a trial." *Precision Planting LLC v. Deere & Co.*, IPR2019-01048, Paper 17 at 15-

19 (Dec. 4, 2019). Whether the Board and the district court will consider the same invalidity arguments is also unknown, as final election of prior art in the parallel litigation is months away. *See* Ex. 1017, 3 (November 13, 2020 scheduled date); Ex. 1018, 3 (same).

VII. CONCLUSION

Cancellation of claims 1-30 is requested.

Dated: April 17, 2020

Respectfully submitted,

By /Marc S. Johannes/
Richard F. Giunta, Reg. No. 36,149
Marc S. Johannes, Reg No. 64,978
Anant K. Saraswat, Reg No. 76,050
Gregory F. Corbett (*pro hac vice* application forthcoming)
Nathan R. Speed (*pro hac vice* application forthcoming)
Turhan F. Sarwar (*pro hac vice* application forthcoming)

WOLF GREENFIELD & SACKS, P.C.
600 Atlantic Ave.
Boston, MA 02210-2206
Tel: 617-646-8000/Fax: 617-646-8646

Claim 1
[1PRE] A device, comprising:
[1A] a screen;
[1B] an input mechanism;
[1C] at least one non-transitory memory storing instructions; and
[1D] one or more processors in communication with the screen, the input mechanism, and the at least one non-transitory memory, wherein the one or more processors execute the instructions to cause the device to:
[1E] display, utilizing the screen of the device, a plurality of indicia each including at least a portion of an image including a face;
[1F] receive, utilizing the input mechanism of the device, a user input in connection with at least one of the indicia including at least a portion of a first image including a first face;
[1G] after receiving the user input in connection with the at least one indicia, display, utilizing the screen of the device, a first set of images each including the first face that has been recognized in at least one of a plurality of images accessible via the device;
[1H] display, utilizing the screen of the device, at least one option for sharing images, where the sharing is performed utilizing face recognition information that is based on third party input of a third party that is provided by the third party into at least one other device in association with at least one face, the face recognition information being utilized in connection with the at least one option for sharing images based on a relation between a user of the device and the third party associated with the third party input, such that the face recognition information is only utilized in connection with the at least one option for sharing images if the relation exists between the user of the device and the third party associated with the third party input;
[1I] in connection with the at least one option for sharing images, display, utilizing the screen of the device, a second set of images each including the at least one face that has been recognized in at least one of the plurality of images accessible via the device utilizing the face recognition information that is based on the third party input of the third party that is provided by the third party into the at least one other device in association with the at least one face;
[1J] receive, utilizing the input mechanism of the device, a user input in connection with at least one of the second set of images; and
[1K] after receiving the user input in connection with at least one of the second set of images, cause one or more of the second set of images to be shared.
Claim 2

[2PRE] The device as set forth in claim 1, wherein the one or more processors execute the instructions to cause the device to:
[2A] display, utilizing the screen of the device, at least one additional option for sharing images; and
[2B] in connection with the at least one additional option for sharing images:
[2C] receive, utilizing the input mechanism of the device, an email address or a name of at least one other person,
[2D] display, utilizing the screen of the device, the plurality of indicia each including the at least portion of the image including the face,
[2E] receive, utilizing the input mechanism of the device, a user input in connection with one or more of the indicia corresponding to one or more faces, and
[2F] based on the user input in connection with the one or more of the indicia corresponding to the one or more faces and utilizing the email address or the name of the at least one other person, cause sharing of a third set of images each including the one or more faces that has been recognized in at least one of the plurality of images accessible via the device.
Claim 3
[3] The device as set forth in claim 2, wherein the device is configured such that the third set of images is caused to be shared by causing an invitation to be sent to the email address of the at least one other person.
Claim 4
[4] The device as set forth in claim 2, wherein the device is configured such that, in response to the one or more faces being recognized in new images, the new images are automatically caused to be shared after the third set of images is caused to be shared.
Claim 5
[5] The device as set forth in claim 2, wherein the device is configured such that the plurality of indicia is part of a face screen that is configured for receiving tags in connection with the plurality of indicia, and the tags are displayed with the plurality of indicia in connection with the at least one additional option for sharing.
Claim 6
[6PRE] The device as set forth in claim 1, wherein the one or more processors execute the instructions to cause the device to:
[6A] after displaying the at least one option for sharing images, receive, utilizing the input mechanism of the device, a user input in connection with the at least one option for sharing images;

[6B] wherein the device is configured such that the second set of images is conditionally displayed, based on the user input in connection with the at least one option for sharing images.
Claim 7
[7PRE] The device as set forth in claim 1, wherein the one or more processors execute the instructions to cause the device to:
[7A] after displaying the at least one option for sharing images, receive, utilizing the input mechanism of the device, a user input in connection with the at least one option for sharing images;
[7B] wherein the device is configured such that the display of the plurality of images is disabled or enabled, based on the user input in connection with the at least one option for sharing images.
Claim 8
[8] The device as set forth in claim 1, wherein the device is configured such [sic] the at least one face is a face of the third party, and the third party input includes an identification [sic] the face of the third party.
Claim 9
[9] The device as set forth in claim 8, wherein the device is configured such [sic] the face recognition information is based on the third party input of the third party, by reflecting the face of the third party.
Claim 10
[10] The device as set forth in claim 1, wherein the device is configured such [sic] the face recognition information is based on the third party input of the third party, by including a correspondence that is identified by the third party input of the third party.
Claim 11
[11] The device as set forth in claim 1, wherein the device is configured such that the third party input includes training input that is input into the at least one other device for generating the face recognition information that is capable of being utilized for identifying the at least one face in the plurality of images accessible via the device.
Claim 12
[12] The device as set forth in claim 1, wherein the device is configured such that the third party input correlates the at least one face with the third party.
Claim 13
[13] The device as set forth in claim 1, wherein the device is configured such that the relation is established based on an invitation and an acceptance of the invitation.
Claim 14

[14] The device as set forth in claim 1, wherein the device is configured such that the relation is established based on contact information of the third party being present in a contact database of the user.
Claim 15
[15] The device as set forth in claim 1, wherein the device is configured such that the at least one option for sharing images includes an option for displaying sharing suggestions based on the face recognition information and the second set of images is displayed as the sharing suggestions for causing the one or more of the second set of images to be shared after the user input in connection the at least one of the second set of images.
Claim 16
[16] The device as set forth in claim 1, wherein the device is configured such that the one or more of the second set of images is caused to be shared with the third party.
Claim 17
[17] The device as set forth in claim 1, wherein the device is configured such that the user input in connection with the at least one of the second set of images includes a deselection of at least a portion of the second set of images, where the second set of images are selected by default.
Claim 18
[18] The device as set forth in claim 1, wherein the device is configured such that the plurality of indicia include a plurality of face icons of a face recognition home screen, and the at least one option is accessible via a configuration interface element separate from the face recognition home screen.
Claim 19
[19A] The device as set forth in claim 1, wherein the instructions are configured to cause the device to access at least one server for:
[19B] receiving at least one web page to cause the device to display the plurality of indicia, the first set of images, the second set of images, and the at least one option for sharing images,
[19C] wherein the at least one web page further permits the receipt, by the device, the user input in connection with the at least one indicia and the user input in connection with at least one of the second set of images;
[19D] where the sharing of the one or more of the second set of images is caused by sending a signal from the device to the at least one server.
Claim 20
[20] The device as set forth in claim 1, wherein the device is configured such that the at least option is capable of being enabled, for permitting the face recognition information, that is based on the third party input, to be utilized for the benefit of

the user by displaying, as sharing suggestions, the second set of images, so that the user is capable of sharing, with the third party and conditionally based on user control, the one or more of the second set of images that are previously accessible only via the device of the user.
Claim 21
[21] The device as set forth in claim 1, wherein the device is configured such that the at least option is capable of being enabled, for permitting the face recognition information, that is based on the third party input, to be utilized for the benefit of the user by displaying, as sharing suggestions, the second set of image without a prior visible indication being received by the user indicating a sharing of the face recognition information by the third party, so that the user is capable of sharing, with the third party and conditionally based on user control, the one or more of the second set of images that are previously accessible only via the device of the user.
Claim 22
[22PRE] The device as set forth in claim 1, wherein at least one of:
[22A] the device includes a mobile device;
[22B] the input mechanism and the screen are components of a touchscreen;
[22C] the input mechanism and the screen are separate components;
[22D] the images include pictures;
[22E] the images are frames of a video;
[22F] the images are part of a video;
[22G] the images are included in corresponding videos;
[22H] the instructions are configured to cause the device to communicate with at least one server, and the communication causes the device to perform at least a portion of at least one instance of the displaying, the receiving, or the sharing;
[22I] the instructions are configured to cause the device to communicate with at least one server, and the communication causes the device to perform at least a portion of each of the displaying, the receiving, and the sharing;
[22J] the indicia includes a visible interface element associated with a face;
[22K] the at least one face is capable of including the first face;
[22L] the plurality of indicia each includes a different face;
[22M] the instructions are part of a client-based application;
[22N] the instructions are utilized to access a server-based application;
[22O] the device is configured such that the user input is received in connection with the at least one indicia as a result of detecting a touch of a finger of the user within a predetermined proximity to the at least one indicia displayed utilizing the screen of the device;

[22P] the second set of images is displayed in response to receipt of a user input in connection with the at least one option for sharing images;
[22Q] the second set of images is displayed in response to receipt of a user input in connection with the at least one option for sharing images, where the at least one option for sharing images includes a share button;
[22R] the one or more of the second set of images caused to be shared, include the at least one of the second set of images;
[22S] the one or more of the second set of images caused to be shared, do not include the at least one of the second set of images;
[22T] the at least one of the second set of images includes a subset of the plurality of images accessible via the device;
[22U] the one or more of the second set of images includes a subset of the plurality of images accessible via the device;
[22V] the one or more of the second set of images is caused to be shared, in response to the receipt of the user input in connection with the at least one of the second set of images;
[22X] the one or more of the second set of images is caused to be shared, after one or more intermediate operations after the receipt of the user input in connection with the at least one of the second set of images;
[22Y] the user input in connection with the at least one of the second set of images includes a selection of the at least one of the second set of images;
[22Z] the user input in connection with the at least one of the second set of images includes a selection on a share button;
[22AA] the first set of images and the second set of images are mutually exclusive;
[22BB] the first set of images and the second set of images overlap;
[22CC] the third party input results in a correspondence;
[22DD] the third party input results in a correspondence between at least one face and at least one user;
[22EE] the third party input results in a correspondence between at least one face and at least one user;
[22FF] the third party input includes a selection of at least one face;
[22GG] the third party input includes tagging input;
[22HH] the face recognition information is directly or indirectly received at the device from the at least one other device;
[22II] the face recognition information is received at the device from at least one server in communication with the device;
[22JJ] the relation is established based on a request and a response to the request;
[22KK] the relation includes a relationship;

[22LL] the plurality of images are accessible via the device are accessible by being stored in the at least one non-transitory memory of the device;
[22MM] the plurality of images are accessible via the device are accessible by being received over a network interface of the device;
[22NN] the face recognition information of the user of the device includes facial data;
[22OO] processing results involving the face recognition information are directly or indirectly received at the device from the at least one other device;
[22PP] processing results involving the face recognition information are received at the device from at least one server in communication with the device; or
[22QQ] the device is part of a system that further comprises at least one server.
Claim 23
[23PRE] An apparatus, comprising:
[23A] a screen;
[23B] an input device;
[23C] at least one non-transitory memory storing instructions; and
[23D] one or more processors in communication with the screen, the input device, and the at least one non-transitory memory, wherein the one or more processors execute the instructions to cause the apparatus to:
[23E] display, utilizing the screen of the apparatus, a plurality of indicia each including at least a portion of an image including a face;
[23F] receive, utilizing the input device of the apparatus, a user input on at least one of the indicia including at least a portion of a first image including a first face;
[23G] in response to the receipt of the user input on the at least one indicia, display, utilizing the screen of the apparatus, a first set of images each including the first face that has been recognized in at least one of a plurality of images accessible via the apparatus;
[23H] provide access to at least one feature for displaying images for sharing, where at least one aspect of the at least one feature utilizes face recognition information that is based on third party information of a third party that is provided by the third party into at least one other device in association with at least one face for correlating the at least one face with the third party, the face recognition information being utilized with the at least one aspect of the at least one feature based on a relation between a user of the apparatus and the third party that provided the third party information, such that the face recognition information is only utilized with the at least one aspect of the at least one feature if the relation exists between the user of the apparatus and the third party associated with the third party information;

[23I] display, utilizing the screen of the apparatus, a second set of images each including the at least one face that has been recognized in at least one of the plurality of images accessible via the apparatus utilizing the face recognition information that is based on the third party information of the third party that is provided by the third party into the at least one other device in association with the at least one face;
[23J] receive, utilizing the input device of the apparatus, a user input on at least one of the second set of images; and
[23K] after receiving the user input on at least one of the second set of images, cause one or more of the second set of images to be shared with the third party.
Claim 24
[24PRE] The apparatus as set forth in claim 23, wherein the apparatus is configured such that:
[24A] the relation is established based on one or more previous communications with the third party;
[24B] the at least one aspect of the at least one feature includes selecting the images for displaying the images for sharing; and
[24C] the at least one face is a face of the third party.
Claim 25
[25] The apparatus as set forth in claim 24, wherein the apparatus is configured such that the at least feature is capable of being enabled, for permitting the face recognition information, that is based on the third party information, to be utilized for the benefit of the user by displaying, as sharing suggestions, the second set of images, so that the user is capable of sharing, with the third party and conditionally based on user control via the user input on at least one of the second set of images, the one or more of the second set of images that are previously accessible only via the apparatus of the user.
Claim 26
[26] The apparatus as set forth in claim 24, wherein the apparatus is configured such that the at least feature is capable of being enabled, for permitting the face recognition information, that is based on the third party information, to be utilized for the benefit of the user by displaying, as sharing suggestions, the second set of image without a prior visible indication being received by the user indicating a sharing of the face recognition information by the third party, so that the user is capable of sharing, with the third party and conditionally based on user control via the user input on at least one of the second set of images, the one or more of the second set of images that are previously accessible only via the apparatus

of the user.
Claim 27
[27PRE] A computer-implemented method, comprising:
[27A] providing access to at least one server utilizing an apparatus including: a screen, an input device, at least one non-transitory memory storing instructions, and one or more processors in communication with the screen, the input device, and the at least one non-transitory memory; and
[27B] communicating with the at least one server such that the apparatus is operable to:
[27C] display, utilizing the screen of the apparatus, a plurality of indicia each including at least a portion of an image including a face;
[27D] receive, utilizing the input device of the apparatus, a user input on at least one of the indicia including at least a portion of a first image including a first face;
[27E] in response to the receipt of the user input on the at least one indicia, display, utilizing the screen of the apparatus, a first set of images each including the first face that has been recognized in at least one of a plurality of images accessible via the apparatus;
[27F] provide access to at least one feature for displaying images for sharing, where at least one aspect of the at least one feature utilizes face recognition information that is based on third party information of a third party that is provided by the third party into at least one other device in association with at least one face for correlating the at least one face with the third party, the face recognition information being utilized with the at least one feature based on a relation between a user of the apparatus and the third party that provided the third party information, such that the face recognition information is only utilized with the at least one feature if the relation exists between the user of the apparatus and the third party associated with the third party information;
[27G] display, utilizing the screen of the apparatus, a second set of images each including the at least one face that has been recognized in at least one of the plurality of images accessible via the apparatus utilizing the face recognition information that is based on the third party information of the third party that is provided by the third party into the at least one other device in association with the at least one face;
[27H] receive, utilizing the input device of the apparatus, a user input on at least one of the second set of images; and
[27I] after receiving the user input on at least one of the second set of images, cause one or more of the second set of images to be shared with the third party.
Claim 28

[28] The method as set forth in claim 27, wherein the at least feature is capable of being enabled, for permitting the face recognition information, that is based on the third party information, to be utilized for the benefit of the user by displaying, as sharing suggestions, the second set of images, so that the user is capable of sharing, with the third party and conditionally based on user control via the user input on at least one of the second set of images, the one or more of the second set of images that are previously accessible only via the apparatus of the user.
Claim 29
[29] The method as set forth in claim 27, wherein the at least feature is capable of being enabled, for permitting the face recognition information, that is based on the third party information, to be utilized for the benefit of the user by displaying, as sharing suggestions, the second set of image without a prior visible indication being received by the user from the third party in connection with a sharing of the face recognition information by the third party, so that the user is capable of sharing, with the third party and conditionally based on user control via the user input on at least one of the second set of images, the one or more of the second set of images that are previously accessible only via the apparatus of the user.
Claim 30
[30PRE] The method as set forth in claim 29, wherein:
[30A] the relation is established based on one or more previous communications with the third party;
[30B] the plurality of indicia is a grid of face interface elements; and
[30C] the at least one aspect of the at least one feature includes the displaying of the images for sharing.

CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (e)(4)

I hereby certify that on April 17, 2020, I will cause a copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,027,726, including any exhibits or appendices referred to therein, to be served on Patent Owner via electronic mail at the e-mail addresses provided below. In view of the COVID-19 situation, the parties agreed to electronic service of the Petition and associated exhibits and papers via email under 37 C.F.R. § 42.105(b).

Derek Dahlgren	ddahlgren@devlinlawfirm.com
Timothy Devlin	tdevlin@devlinlawfirm.com
Cory Edwards	cedwards@devlinlawfirm.com
Feng Xu	fxu@devlinlawfirm.com
	dlflitparas@devlinlawfirm.com

Date: April 17, 2020

/MacAulay S. Rush /
MacAulay S. Rush
Paralegal
WOLF, GREENFIELD & SACKS, P.C.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24, the undersigned certifies that the foregoing Petition for *Inter Partes* Review contains 13,992 words excluding a table of contents, a table of authorities, Mandatory Notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing. Petitioner has relied on the word count feature of the word processing system used to create this paper in making this certification.

Date: April 17, 2020

/MacAulay S. Rush /
MacAulay S. Rush
Paralegal
WOLF, GREENFIELD & SACKS, P.C.