I/P ENGINE, INC., Plaintiff-Cross Appellant, v. AOL INC., GOOGLE INC., IAC SEARCH & MEDIA, INC., GANNETT COMPANY, INC., AND TARGET CORPORATION, Defendants-Appellants.

2013-1307, 2013-1313

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

576 Fed. Appx. 982*; *2014 U.S. App. LEXIS 15667

August 15, 2014, Decided

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PRIOR HISTORY: [**1] Appeals from the United States District Court for the Eastern District of Virginia in No. 11-CV-0512, Judge Raymond Alvin Jackson.
I/P Engine, Inc. v. AOL Inc., 2012 U.S. Dist. LEXIS 166555 (E.D. Va., Nov. 20, 2012)

DISPOSITION: REVERSED.

COUNSEL: DAVID A. PERLSON, Quinn Emanuel Urquhart & Sullivan LLP, of San Francisco, California, argued for defendants-appellants. With him on the brief were EMILY C. O'BRIEN, ANTONIO R. SISTOS, MARGARET P. KAMMERUD, and JOSHUA L. SOHN; and DAVE NELSON, of Chicago, Illinois. Of counsel were DAVID L. BILSKER and KEVIN ALEXANDER SMITH, of San Francisco, California, and ROBERT B. WILSON, of New York, New York. Of counsel on the brief for Google Inc. were DARYL L. JOSEFFER, King & Spalding LLP, of Washington, DC, and ADAM M. CONRAD, of Charlotte, North Carolina.

JOSEPH R. RE, Knobbe, Martens, Olson & Bear, LLP, of Irvine, California, argued for plaintiff-cross appellant. With him on the brief was STEPHEN W. LARSON. Of Counsel on the brief were JEFFREY K. SHERWOOD, FRANK C. CIMINO, JR., KENNETH W. BROTHERS, DAWN RUDENKO ALBERT, CHARLES J. MONTERIO, JR., and JONATHAN L. FALKLER, Dickstein Shapiro LLP, of Washington, DC.

EDWARD R. REINES and JILL J. SCHMIDT, Weil, Gotshal & Manges LLP, of Redwood Shores, California, for amici curiae Newegg Inc., et al.

JUDGES: Before WALLACH, [**2] MAYER, and CHEN, Circuit Judges. Concurring Opinion filed by Circuit Judge MAYER. Dissenting Opinion filed by Circuit Judge CHEN.

OPINION

[*983] PER CURIAM.

I/P Engine, Inc. ("I/P Engine") brought an action against AOL Inc., Google Inc. ("Google"), IAC Search & Media, Inc., Gannett Company, Inc., and Target Corporation (collectively, the "Google Defendants") alleging infringement of *U.S. Patent Nos. 6,314,420* (the "*'420 patent*") and *6,775,664* (the "*'664 patent*"). A jury returned a verdict finding that all asserted claims were infringed and not anticipated. J.A. 4163-73. The district court then determined that the asserted claims were not

obvious and entered judgment in I/P Engine's favor. *See I/P Engine, Inc. v. AOL Inc., No. 11-CV-0512, 2012 U.S. Dist. LEXIS 166555 (E.D. VA Nov. 20, 2012)* ("*Non-Obviousness Order*"). Because the asserted claims of the *'420* and *'664 patents* are invalid for obviousness, we reverse.

BACKGROUND

The *'420* and *'664 patents* both claim priority to the same parent patent, *U.S. Patent No. 5,867,799*. They relate to a method for filtering Internet search results that utilizes both content-based and collaborative filtering. *See '420 patent* col.1 ll.10-16, col.2 ll.20-26; *'664 patent* col.23 ll.29-44.[1] Content-based filtering is a technique for determining relevance by extracting features such as text from an information item. *'420 patent* col.4 ll.22-26; *see also* J.A. 487. By contrast, collaborative filtering assesses [**3] relevance based on feedback from other users--it looks to what items "other users with similar interests or needs found to be relevant." *'420 patent* col.4 ll.28-29; *see also* J.A. 487. The asserted patents describe a system "wherein a search engine operates with [*984] collaborative and content-based filtering to provide better search responses to user queries." *'420 patent* col.1 ll.14-16. Specifically, the asserted claims describe a filter system that combines content and collaborative data in filtering each "informon"--or information item--for relevance to a user's query.[2] Asserted claim 10 of the *'420 patent* recites:

> A search engine system comprising: a system for scanning a network to make a demand search for informons relevant to a query from an individual user; a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and a feedback system for receiving collaborative feedback data from system users relative to in-formons considered by such users; the filter system combining pertaining feedback data from the feedback system with the content profile data in filtering each informon for relevance [**4] to the query.

Id. col.28 ll.1-15; *see also id.* col.29 ll.32-44.

1 The specifications of the *'420* and *'664 patents* are substantively identical, but employ slightly dissimilar line numbering. Unless otherwise noted, citations to the specification refer to the line numbering used in the *'420 patent*.

2 The parties stipulated that the term "informon" referred to an "information entity of potential or actual interest to the [individual/first] user." *I/P Engine, Inc. v. AOL Inc., 874 F. Supp. 2d 510, 517 (E.D. Va. 2012)* (internal quotation marks omitted) ("*Claim Construction Order*"). The asserted patents explain that an "informon" can be all or part of a text, video, or audio file. *'420 patent* col.3 ll.30-35.

Asserted claim 1 of the *'664 patent* provides:

> A search system comprising: a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; a feedback system for receiving information found to be relevant to the query by other users; and a content-based filter system for combining the information from the feedback system with the information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user.

'664 patent col.27 ll.27-37.

Claim 26 of the *'664 patent* is similar to claim 1, but cast as a method claim:

> A [**5] method for obtaining information relevant to a first user comprising: searching for information relevant to a query associated with a first user in a plurality of users; receiving information found to be relevant to the query by other users; combining the information found to be relevant to the query by other users with the searched information; and content-based filtering the combined information for relevance to at least one of the query and the first user.

Id. col.28 ll.56-65.

On September 15, 2011, IP/Engine [3] filed a complaint in the United States District Court for the Eastern District of Virginia alleging that Google's AdWords, AdSense for Search, and AdSense for Mobile Search systems, which display advertisements on web pages, infringed claims 10, 14, 15, 25, 27, and 28 of the *'420 patent* and claims 1, 5, 6, 21, 22, 26, 28, and 38 of the *'664 patent*. *See Claim Construction Order, 874 F. Supp. 2d at 514-15*. On December 5, 2011, the Google Defendants filed counterclaims, seeking declaratory judgments of non-infringement and invalidity of both the *'420* and *'664 patents*. *Id. at 514*.

3 In 2012, I/P Engine became a subsidiary of Vrin-go, Inc. J.A. 2046-47.

Following a *Markman* hearing, the district court construed disputed claim terms. The court concluded that: (1) the term [*985] "collaborative [**6] feedback data" refers to "data from system users regarding what informons such users found to be relevant"; (2) the term "scanning a network" means "looking for or examining items in a network"; and (3) the term "demand search" refers to "a single search engine query performed upon a user request." *Id. at 525* (internal quotation marks omitted).

During a twelve-day trial, the Google Defendants pointed to numerous prior art references to support their contention that the claims of the *'420* and *'664 patents* were invalid as anticipated and obvious. In particular, they argued that *U.S. Patent No. 6,006,222* ("Culliss") anticipated the asserted claims, and that those claims were obvious in view of: (1) *U.S. Patent No. 6,202,058* ("Rose"); (2) Yezdezard Z. Lashkari, Feature Guided Automated Collaborative Filtering (July 25, 1995) (M.S. thesis, Massachusetts Institute of Technology) ("WebHound"); and (3) Marko Balabanovic & Yoav Sho-ham, *Content-Based, Collaborative Recommendation*, 40 Comms. of the ACM 66 (1997) ("Fab").

The jury returned a verdict on November 6, 2012, finding that the Google Defendants had infringed all asserted claims and awarding damages of $30,496,155.[4] J.A. 4173. The jury also found that the asserted claims were not anticipated, and answered a special [**7] verdict form on factual issues pertaining to the obviousness inquiry. J.A. 4169-72. Specifically, the jury found that "Rose, [WebHound] and Fab[] were profile systems that did not disclose a tightly integrated search system, and could not filter information relevant to the query." J.A. 4170, 4171-72.

4 The jury also awarded I/P Engine a running royalty of 3.5%. J.A. 4173.

On November 20, 2012, the district court ruled that the Google Defendants had "failed to prove, by clear and convincing evidence, that the *'420 Patent* or the *'664 Patent* [was] obvious." *Non-Obviousness Order, 2012 U.S. Dist. LEXIS 166555, at *9*. The district court further determined that the equitable doctrine of laches barred I/P Engine from recovering damages for any infringement occurring prior to September 15, 2011, the date of its complaint. *I/P Engine, Inc. v. AOL Inc., 915 F. Supp. 2d 736, 746-49 (E.D. Va. 2012)*. The court explained that I/P Engine "had constructive notice that the Google Adwords system potentially infringed its patents as of July 2005 and [yet] failed to undertake any reasonable investigation to further determine if infringement was occurring." *Id. at 744*. The court stated, moreover, that "[a]lthough Congress is best left to consider the merits of non-practicing patent entities in our patent system, the dilatory nature of [I/P Engine's] suit is precisely why the [**8] doctrine of laches has been applied to patent law." *Id. at 748*.

On December 18, 2012, the Google Defendants filed motions for a new trial and for judgment as a matter of law on non-infringement, invalidity, and damages. J.A. 4252-381. I/P Engine also filed post-trial motions, arguing that the district court erred in applying the doctrine of laches to preclude recovery of damages for infringement in the period prior to September 15, 2011. J.A. 4433, 4550-56. All of these motions were denied by the district court. J.A. 59-67.

The Google Defendants then filed a timely appeal with this court. They argue that: (1) the infringement determination should be set aside because the accused systems do not meet claim limitations which require "combining" content data with feedback data and filtering "the combined information"; (2) the accused systems do not meet the limitation contained [*986] in claim 10 of the *'420 patent* requiring a "demand search"; (3) I/P Engine improperly relied on marketing documents, rather than source code, in attempting to establish infringement and misled the jury by insinuating that Google had "copied" the system claimed in I/P Engine's patents; (4) the district court erred as a matter of law in [**9] finding the asserted claims non-obvious; (5) the asserted claims

are invalid as anticipated because Culliss discloses filtering Internet articles based on scores that combine both content and collaborative feedback data; and (6) I/P Engine failed to introduce any credible evidence of damages in the period following the filing of its complaint. I/P Engine filed a cross-appeal in which it argues that the district court erred in applying the doctrine of laches to bar recovery for infringement occurring prior to September 15, 2011. I/P Engine further contends that even if laches does apply, it is entitled to damages of more than $100 million for infringement occurring after the date it filed its complaint. We have jurisdiction under *28 U.S.C. § 1295(a)(1)*.

DISCUSSION

I. Standard of Review

"Whether the subject matter of a patent is obvious is a question of law and is reviewed de novo." *Procter & Gamble Co. v. Teva Pharms. USA, Inc., 566 F.3d 989, 993 (Fed. Cir. 2009)*; *see PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1359 (Fed. Cir. 2007)*. The factual findings underlying an obviousness determination include: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any objective indicia of non-obviousness. *See Graham v. John Deere Co., 383 U.S. 1, 17-18, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966)*.

II. The Obviousness Determination

The Google [**10] Defendants argue that I/P Engine's claimed invention is obvious as a matter of law because it simply combines content-based and collaborative filtering, two information filtering methods that were well-known in the art. They assert, moreover, that the prior art contained explicit statements describing the advantages of combining these two filtering techniques, and that it would have been obvious to include a user's query in the filtering process. *See* Br. of Defendants-Appellants at 35-38.

We agree and hold that no reasonable jury could conclude otherwise. The asserted claims describe a system that combines content and collaborative data in filtering each "informon"--or information item--for relevance to an individual user's search query. *'420 patent* col.28 ll.1-15; *'664 patent* col.27 ll.27-37. As the asserted patents themselves acknowledge, however, search engines, content-based filtering, and collaborative filtering were all well-known in the art at the time of the claimed invention. *See '420 patent* col.1 ll.20-45. The record is replete, moreover, with prior art references recognizing that content-based and collaborative filtering are complimentary techniques that can be effectively combined. The WebHound reference explains that "content-based and automated [**11] collaborative filtering are complementary techniques, and the combination of [automated collaborative filtering] with some easily extractable features of documents is a powerful information filtering technique for complex information spaces." J.A. 5427. The Fab reference likewise notes that "[o]nline readers are in need of tools to help them cope with the mass of content available on the World-Wide Web," and explains that "[b]y combining both collaborative and content-based [*987] filtering systems," many of the weaknesses in each approach can be eliminated. J.A. 5511. Similarly, the Rose patent, which was filed in 1994 by engineers at Apple Computer, Inc., states that "[t]he prediction of relevance [to a user's interests] is carried out by combining data pertaining to the content of each item of information with other data regarding correlations of interests between users." J.A. 5414. These references, individually and collectively, teach the clear advantages of combining content-based and collaborative filtering.[5]

> 5 I/P Engine points to recent United States Patent and Trademark Office ("PTO") reexamination proceedings which concluded that Rose and WebHound do not anticipate the asserted claims of the *'420 patent*. J.A. [**12] 7899-902. Here, however, the question is not whether Rose and WebHound anticipate the asserted claims, but instead whether the prior art, viewed as a whole, renders the asserted claims obvious. *See Cohesive Techs., Inc. v. Waters Corp., 543 F.3d 1351, 1364 (Fed. Cir. 2008)* ("Obviousness can be proven by combining existing prior art references, while anticipation requires all elements of a claim to be disclosed within a single reference."); *Medichem, S.A. v. Rolabo, S.L., 437 F.3d 1157, 1166 (Fed. Cir. 2006)* (explaining that in an obviousness analysis "the prior art must be considered *as a whole* for what it teaches").

On appeal, I/P Engine does not dispute that the prior art disclosed hybrid content-based and collaborative

filtering. It contends, however, that it would not have been obvious to a person of ordinary skill in the art to filter items for relevance to a user's query using combined content and collaborative data. In I/P Engine's view, the prior art simply took the results of content-based filtering and "threw them over a proverbial wall to a separate profile-based [filtering] system," but did not also throw the search query "over the wall" for use in the filtering process. Br. of Plaintiff-Cross Appellant at 6-7; *see also id.* at 40-43; J.A. 3689-90, 3728-31.

The fundamental flaw in I/P Engine's argument is that using an individual [**13] user's search query for filtering was a technique widely applied in the prior art. Indeed, the shared specification of the *'420* and *'664 patents* acknowledges that "conventional search engines" filtered search results using the original search query. *See '420 patent* col.2 ll.15-18 (explaining that "conventional search engines initiate a search in response to an individual user's query and use content-based filtering *to compare the query to accessed network informons*" (emphasis added)). Given that its own patents acknowledge that using the original search query for filtering was a "conventional" technique, I/P Engine cannot now evade invalidity by arguing that integrating the query into the filtering process was a non-obvious departure from the prior art. *See PharmaStem, 491 F.3d at 1362* ("Admissions in the specification regarding the prior art are binding on the patentee for purposes of a later inquiry into obviousness."); *see also Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1570 (Fed. Cir. 1988)* ("A statement in a patent that something is in the prior art is binding on the applicant and patentee for determinations of anticipation and obviousness.").

While I/P Engine acknowledges that the prior art disclosed "conventional 'content-based filtering' in response to a query," it contends that the prior art [**14] did "not show or suggest using content and collaborative data together in filtering items for relevance to a query." Br. of Plaintiff-Cross Appellant at 43. This argument "tak[es] an overly cramped view of what the prior art teaches." *Allergan, Inc. v. Apotex Inc., 754 F.3d 952, 963 (Fed. Cir. 2014).* The Culliss patent renders the asserted claims obvious because it plainly discloses using combined content and collaborative [*988] data when analyzing information for relevance to a user's search query. In the Culliss system, Internet articles are assigned a "key term score" for significant words or phrases. J.A. 5521. Culliss teaches content-based analysis because the key term score can initially be based on the number of times a particular term appears in an article.[6] J.A. 5526. Culliss also describes collaborative feedback analysis because the key term score will be increased when search engine users who query particular key terms select an article from the search results list. J.A. 5521. Significantly, moreover, Culliss presents articles to users based upon their key term scores for the terms that were used in a user's search query. J.A. 5521 ("As users enter search queries and select articles, the scores are altered. The scores are then used in subsequent searches [**15] to organize *the articles that match a search query*." (emphasis added)). Culliss, therefore, squarely discloses using combined content and collaborative data in analyzing items for relevance to a query.

> 6 Dr. Jaime Carbonell, I/P Engine's expert, asserted that Culliss does not disclose content-based filtering as required by the asserted claims because Culliss' repeated feedback-based adjustments to a key term score will dilute or "swamp" the content portion of the score over time. J.A. 3714, 3787. Notably, however, while the asserted claims require content-based filtering, they do not mandate that content-based analysis play a dominant role in the filtering process. *See '420 patent* col.28 ll.1-15; *'664 patent* col.27 ll.27-37. Thus, the fact that in the Culliss system content data may play less and less of a role as more user feedback is obtained does not mean that Culliss does not disclose content-based filtering. To the contrary, Culliss explains that while feedback can raise an article's key term score (when the article is clicked on by other users), it can also lower that score (when the article is not clicked on by other users). J.A. 5527 ("[I]f the user does not select the matched article, the key term score [**16] for that matched article under that key term can be assigned a negative score."). Thus, the positive and negative feedback adjustments could potentially nearly "cancel each other out," and content data could play a very significant role in setting an article's overall score.

I/P Engine contends that Culliss does not anticipate because it "describes a system for ranking items, not filtering them, as required by the asserted claims." Br. of Plaintiff-Cross Appellant at 54. As Dr. Lyle Ungar, the Google Defendants' expert, explained at trial, however, "the standard way of filtering is to rank things and pick

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