

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

RIDESHARE DISPLAYS, INC.,
Appellant

**JOHN A. SQUIRES, UNDER SECRETARY OF
COMMERCE FOR INTELLECTUAL PROPERTY
AND DIRECTOR OF THE UNITED STATES
PATENT AND TRADEMARK OFFICE,**
Intervenor

v.

LYFT, INC.,
Cross-Appellant

2023-2033, 2023-2034, 2023-2035, 2023-2036, 2023-2037,
2023-2038, 2023-2039

Appeals from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in Nos. IPR2021-
01598, IPR2021-01599, IPR2021-01600, IPR2021-01601,
IPR2021-01602.

Decided: September 29, 2025

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Before TARANTO, CHEN, and HUGHES, *Circuit Judges*.
HUGHES, *Circuit Judge*.

Rideshare Displays, Inc. appeals five decisions of the Patent Trial and Appeal Board determining that claims 1–9 and 11–20 of U.S. Patent No. 9,892,637; claims 1, 2, 4, and 6–8 of U.S. Patent No. 10,169,987; claim 1 of U.S. Patent No. 10,395,525; claims 1 and 2 of U.S. Patent No. 10,599,199; and claims 1–5 of U.S. Patent No. 10,748,417 are unpatentable for obviousness. Lyft, Inc. cross-appeals the Board’s partial grant of Rideshare’s motions to amend claims 29, 31, and 32 of the ’637 patent and claims 1 and 4 of the ’199 patent. For the lead appeal, we affirm the Board’s holding that all challenged claims are unpatentable. For the cross-appeal, we reverse the Board’s partial grant of the motions to amend.

I

A

The challenged patents, U.S. Patent Nos. 9,892,637; 10,169,987; 10,395,525; 10,559,199; and 10,748,417, are all directed to “a system and method for vehicle identification” that allows users of ridesharing apps to verify that they are getting in the correct cars, and for drivers to verify that

they are picking up the correct riders.¹ J.A. 245. The patent states that the invention's goal is to address safety concerns for both drivers and riders. J.A. 245

The patents presume that both rider and driver are using mobile communication devices. J.A. 246. The system works by having the driver's device receive a notification signal that triggers an indicator that is visible from outside the car. The specification states that the indicator could be on an article of clothing or on a tablet held by the driver. The indicator can be a code, like a text or alphanumeric string, or an icon on a display that allows the rider to locate the driver and her car. J.A. 246.

Some embodiments involve transmission of a "notification signal" to the driver's device when the driver's vehicle reaches a predetermined distance away from the user's device. J.A. 247. In response to receiving the notification signal, the driver's device generates an indicatory signal. J.A. 247. The indicatory signal then triggers the display to show the indicator. J.A. 247. In another embodiment, the driver's device generates a second signal representing an indicator that is transmitted to the user's mobile device. J.A. 247.

The below claims are illustrative of the claimed subject matter.

1. A vehicle identification system, comprising:

a display associated with a vehicle, wherein the display is located to be visible from an exterior of the vehicle by a rider;

a controller communicatively coupled to a network and configured to, in response to receipt of a signal from a user, generate and transmit a first signal

¹ All five patents at issue share a specification, so all citations are to the '637 patent specification.

representing an indicator via the network to a mobile communication device associated with a driver of the vehicle; and

wherein, in response to receiving the first signal, the mobile communication device associated with the driver of the vehicle generates and transmits a second signal representing the indicator to the display, the indicator identifies the vehicle.

'987 patent, 7:32–46.

1. A vehicle identification system, comprising:

a display associated with a front windshield of a vehicle, wherein the display is movable so as to be visible from an exterior of the vehicle by a rider;

a controller communicatively coupled to mobile communication devices, wherein the controller generates a first signal representing an indicator which is transmitted to a mobile communication device associated with a driver of the vehicle and a second signal representing the indicator which is transmitted to a mobile communication device associated with the rider; and

wherein the mobile communication device associated with the driver of the vehicle generates a third signal representing the indicator, which is transmitted to the display, the third signal representing the indicator identifies the vehicle.

'525 patent, 8:8–23.

1. A vehicle identification system for mobile communication device users, comprising:

a display associated with a vehicle, wherein the display is located to be visible from an exterior of the vehicle by mobile communication device users;

a controller communicatively coupled to a network and configured to, in response to receipt of a ride request signal from a mobile communication device of a user in a pickup area, generate and transmit a notification signal via the network to a mobile communication device associated with a driver of the vehicle, and in response to the mobile communication device associated with the driver of the vehicle receiving the notification signal an indicatory signal representing a visual indicator is generated and transmitted to the display and the mobile communication device of the user, wherein the visual indicator is not duplicated in the same pickup area.

'417 patent, 7:31–8:13.

B

There are four pieces of prior art relevant to this appeal. The first is U.S. Patent Publication No. US2012/0137256 (Lalancette). The Lalancette reference is entitled “Human Readable Iconic Display Server” and discloses a cross-platform target identification system for “identify[ing] a target in a target-rich environment.” J.A. 342. The patent application is directed to a system that uses icons to provide a “more discreet but publicly visible means of alerting a target.” J.A. 342. One embodiment comprises a taxi service where, in response to receiving a user’s request for the service, the system generates an icon that is sent to the user and displayed on the taxi’s electronic roof display to provide confirmation to the user that they are getting in the right taxi. J.A. 342.

The second is U.S. Patent Publication No. US2015/0332425 (Kalanick). The Kalanick reference is entitled “User-Configurable Indication Device for Use with an On-Demand Service” and discloses a vehicle identification system that involves a display either positioned on or fastened to the vehicle. J.A. 304. The display can output “color(s), [] pattern(s), illumination sequence(s), text,

visual content, video, and/or audio.” J.A. 304. The user can specify the configuration for the display or let the system set a default indicator. J.A. 307. When the system determines that the driver is arriving at the pickup location, the system displays the selected configuration. J.A. 307–08.

The third is U.S. Patent No. 9,494,938 (Kemler). The Kemler reference is entitled “Unique Signaling for Autonomous Vehicles To Preserve User Privacy” and discloses systems and methods to provide a user with a way to identify and confirm that they are interacting with the correct requested driverless vehicle. J.A. 317. One contemplated embodiment involves the vehicle displaying a signal on an external device that is also provided to the user’s device. J.A. 329.

The final relevant piece of prior art is U.S. Patent No. 9,442,888 (Stanfield). The Stanfield reference is entitled “Apparatus And Methods For Renting And Controlling Occupancy Of A Vehicle” and discloses systems and methods to determine whether a vehicle is available for rent. J.A. 1668. One contemplated embodiment involves the vehicle displaying a signal on a visual indicator that shows that the vehicle is available for rent. J.A. 1677.

C

In November 2021, Lyft filed five petitions for *inter partes* review of the challenged patents. The five IPR proceedings were consolidated for the purposes of this appeal. The Board found all the challenged claims unpatentable as obvious or anticipated over the prior art references of Kalanick, Lalancette, and Kemler, either alone or in combination. J.A. 1–72, 73–119, 120–47, 148–211, 212–39.

In the IPR proceedings involving the ’637 patent and the ’199 patent, Rideshare moved to amend the claims and add proposed substitute claims 21–32 for the ’637 patent and proposed substitute claims 3–4 for the ’199 patent. The Board allowed substitute claims 29 and 31–32 for the ’637

patent and claims 3–4 for the '199 patent and either denied or did not reach the remaining proposed substitute claims. J.A. 70–71, 210. The below claims are illustrative of the substitute claims.

'637 patent, Substitute Claim 29. A method of identifying a vehicle being dispatched to a location of a user having requested a ride from a transportation service, comprising:

when it is determined that the vehicle is within a predetermined distance of the location of the user, generating a notification signal to a mobile communication device associated with the driver;

generating, by creating an indicator, an indicatory signal representing ~~an~~ the indicator in response to receiving the notification signal;

displaying, on a display associated with the vehicle, the indicator based on the notification and indicatory signals, the display being located to be visible on the exterior of the vehicle;

displaying the indicator on a mobile communication device associated with the user; and

identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the mobile communication device associated with the user and the indicator being displayed on the display associated with the vehicle.

J.A. 56–57.

'199 patent, Substitute Claim 3. A vehicle identification method implemented as an Application on mobile communication devices over a wireless communication network, comprising:

requesting a ride from a transportation service from a mobile communication device of a user;

determining that a vehicle is within a predetermined distance of the location of the user;

generating a notification signal to a mobile communication device associated with a driver of the vehicle;

generating, by creating an indicator that is specific to a user and driver match, an indicatory signal representing ~~an~~ the indicator;

displaying the indicator based on the notification signal on a display associated with the vehicle, the mobile communication device associated with the driver, and the user's mobile communication device, wherein the display associated with the vehicle is located to be visible from the exterior of the vehicle; and

identifying the vehicle based on appearance of a match, by visual observation of the user, between the indicator being displayed on the user's mobile communication device and the indicator being displayed on the display associated with the vehicle.

J.A. 197.

Rideshare appeals the Board's unpatentability conclusions for claims 1–9 and 11–20 of the '637 patent; claims 1, 2, 4, 6–8 of the '987 patent; claim 1 of the '525 patent; claims 1 and 2 of the '199 patent; and claims 1–5 of the '417 patent. Lyft cross-appeals the Board's partial grant of Rideshare's motions to amend claims 29, 31, and 32 of the '637 patent and claims 3 and 4 of the '199 patent. The U.S. Patent and Trademark Office intervened in the appeals for the limited purpose of addressing patent eligibility under 35 U.S.C. § 101. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

II

We review the Board’s legal conclusions de novo and factual findings for substantial evidence. *Almirall, LLC v. Amneal Pharms. LLC*, 28 F.4th 265, 271–72 (Fed. Cir. 2022). Substantial evidence means “such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000) (citation omitted). We review the Board’s “claim construction and any supporting determinations based on intrinsic evidence de novo.” *Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021). The factual findings underpinning the use of extrinsic evidence are reviewed for substantial evidence. *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1362 (Fed. Cir. 2018). Obviousness is a question of law based on underlying findings of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). “The determination of what a reference teaches is one of fact, as is the existence of a reason for a person of ordinary skill to combine references.” *In re Constr. Equip. Co.*, 665 F.3d 1254, 1255 (Fed. Cir. 2011).

We review the Board’s decision to grant a motion to amend under the APA and can set aside the Board’s action if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” *Am. Nat’l Mfg. Inc. v. Sleep No. Corp.*, 52 F.4th 1371, 1382–83 (Fed. Cir. 2022) (quoting 5 U.S.C. § 706(2)(A)). We review the Board’s patent-eligibility determination de novo. *cxLoyalty, Inc. v. Maritz Holdings Inc.*, 986 F.3d 1367, 1376 (Fed. Cir. 2021). “Whether a claim amendment satisfies the written description requirement or improperly adds new matter are both questions of fact reviewed for substantial evidence.” *Medytox, Inc. v. Galderma S.A.*, 71 F.4th 990, 996 (Fed. Cir. 2023).

III

On appeal, Rideshare raises four issues with respect to the Board's unpatentability determinations. We address each in turn.

First, Rideshare contends that the Board erred in its claim construction of the term “generate” in the claim phrase “generate a signal representing an indicator.” The Board construed “generate” to have its plain and ordinary meaning, “which is to originate or produce the signal.” J.A. 19. Rideshare argues that the term “generate” needs to modify both the “signal” and the “indicator/code” because the signal contains indicator information, such that a new indicator is created whenever the signal is generated. We disagree; the Board did not err in its construction. The plain meaning of the claim, and a proper grammatical construction, is that a signal is generated, and said signal represents an indicator—not that the indicator is also generated. We find no error in the Board's construction of this claim term. Because we do not adopt Rideshare's proposed construction of the term, we need not address the obviousness arguments that are predicated on reversing the Board's construction. *See* Appellant's Opening Br. 28–32.

Second, Rideshare argues that there is not substantial evidence to support the Board's determination that Lalancette discloses a “communication device associated with the driver of a vehicle.” The Board concluded that Lalancette discloses a “mobile computer” in a taxi that receives dispatch information, the signal containing the rider's indicator, and displays the icon on the roof-top display. J.A. 142–43. The Board noted that “mobile computer” can include a smartphone, and Lalancette does not describe a specific form that the mobile computer must take. J.A. 142. Rideshare argues that the “patents[] make clear that a ‘mobile communication device’ must be both portable and personal to the driver,” Appellant's Opening Br. 33, and that Lalancette does not disclose a system that

includes a mobile communication device associated with the driver because Lalancette discloses a taxi service, so the devices are associated with the taxis, not the drivers. We disagree. The specification states that examples of mobile communication devices include cell phones, smart phones, mobile email devices, and digital personal assistants, and nothing in the specification supports limiting the definition of a mobile communication device in the way Rideshare suggests. J.A. 246. Moreover, the Board had substantial evidence in finding that Lalancette's computer is "associated with the driver": the mobile computer connects to a dashboard, which in turn provides the driver with helpful information. *See* J.A. 343 ¶ 32. Rideshare does not resist that understanding of Lalancette, *see* Appellant's Br. 47–48, and we see no reason why that disclosed relation between mobile computer and the driver would fail to "associate" the mobile computer with the driver. Accordingly, we conclude that substantial evidence supports the Board's determination that Lalancette discloses a "communication device associated with the driver of a vehicle."

Third, Rideshare argues that there is not substantial evidence to support the Board's determination that Kalanick in combination with Kemler discloses sending a "[notification] signal . . . when [a] vehicle is within a predetermined distance from a specific location." J.A. 40–41. The Board relied on expert testimony to conclude that Kalanick teaches a notification signal being sent from the controller to user and driver devices, and that the system can determine if the driver's position is within a predetermined distance from the user's current location. The Board also found that Kemler teaches sending a notification to a server when the driver reaches a particular location. J.A. 42. The Board found that a skilled artisan would have been motivated to combine the two references to "tie transmission of the first signal to a distance at which the user would be in range to visually observe and identify the vehicle, thereby resulting in improved accuracy, efficiency,

and privacy of the user identification system.” J.A. 42. Rideshare argues that the patent discloses two signals, a notification signal and a signal that represents an indicator, and that Kalanick and Kemler do not teach a notification signal. Yet Kalanick’s system transmits a “first signal”/“notification signal” too: because the centralized controller can determine whether the driver arrives at a predetermined position, it must necessarily exchange a signal premised on location data, i.e., the first/notification signal, alongside any other indicatory signals. The specification of Kemler, moreover, discloses that the centralized system may send a signal when the vehicle is within a certain distance from the user, J.A. 330, and the first signal is referred to as a “notification signal” in the ’637 patent, J.A. 245. This supports the Board’s conclusion that Kemler, in combination with Kalanick, teaches sending a notification signal when a vehicle is within a predetermined distance from a specified location.

Fourth, Rideshare argues that there is not substantial evidence to support the Board’s determination that the combination of Kalanick and Kemler discloses the system “in response to receipt of a signal from the user, generate and transmit a first signal representing an indicator” because Kalanick teaches the user sending a signal, and Kemler teaches a central controller sending a signal representing the indicator to the driver’s device. J.A. 94–98. Rideshare argues that Kalanick does not disclose generating and transmitting a first signal in response to the user, but instead the signal is transmitted in response to determining that the user has specified an output configuration because that is an intermediary step that occurs in the claim language. Rideshare’s argument supposes that there must be a direct relationship between the user’s request and transmitting the signal. We disagree that the claims require a direct link and exclude a causal chain. We agree with the Board that the intermediary step does not disrupt

the causal chain. We conclude that substantial evidence supports the Board's conclusion.

We find no reversible error on appeal and affirm the Board's conclusions that the challenged claims are unpatentable.

IV

Lyft's cross-appeal challenges the Board's grant of Rideshare's motion to amend on three independent grounds: patent eligibility under 35 U.S.C. § 101, written description support in the original disclosures, and unpatentability due to obviousness.

Section 101 provides that a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. But "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (internal quotations and citation omitted). In *Alice*, the Supreme Court laid out a two-step inquiry to determine whether a patent is directed to eligible subject matter under § 101. We first consider "whether the claims at issue are directed to a patent-ineligible concept." *Id.* at 218. If the claims are directed to a patent-ineligible concept, we then "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 78–79 (2012)).

The Board concluded that the substitute claims were directed to an abstract idea, a patent-ineligible concept, under step one of the *Alice* framework, namely a method of

organizing human activity.² J.A. 64–65, 204, 2019, 2042. But under step two, the Board concluded that the claims provided a technological solution to a technological problem in computer and network technologies, which rendered the claims patent eligible. J.A. 64–66, 204–05.

We disagree with the Board’s conclusion at step two that the claims are directed to a technological solution. “[I]mproving a user’s experience while using a computer application is not, without more, sufficient to render the claims directed to an improvement in computer functionality.” *Simio, LLC v. FlexSim Software Prods., Inc.*, 983 F.3d 1353, 1361 (Fed. Cir. 2020) (citation omitted). Here, the claims are directed to improving a user’s experience in using a ridesharing app and identifying a driver. But nothing in the claims themselves is directed to an improvement to the mobile device environment itself—the technological improvement more easily enables and facilitates human interactions, but it does not fundamentally alter or improve the way the technology itself functions. The claims use technology as a tool to streamline the process of what is normally accomplished by creating hand-printed cards with names to help identify ride pickups at crowded locations, such as an airport. “[I]nvoking a computer merely as

² The Board used the USPTO’s 2019 Revised Patent Subject Matter Eligibility Guidance and the October 2019 Update, which uses a three-pronged framework. The Guidance is available at: <https://www.federalregister.gov/documents/2019/01/07/2018-28282/2019-revised-patent-subject-matter-eligibility-guidance>; https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf. We decline to adopt this framework, which is not binding on this Court, and instead evaluate the Board’s decision under our precedent, which follows the two-step test set out in *Alice*. See *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016).

a tool” to “improve a fundamental practice or abstract process” does not make an otherwise abstract claim non-abstract. *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1364 (Fed. Cir. 2020). We thus conclude that the Board’s determination that the substitute claims were directed to patent-eligible subject matter was legal error warranting reversal.³

V

We have considered the parties’ remaining arguments and find them unpersuasive. For the reasons provided above, we affirm the Board’s determination that claims 1–9 and 11–20 of the ’637 patent, claims 1, 2, 4, and 6–8 of the ’987 patent, claim 1 of the ’525 patent, claims 1 and 2 of the ’199 patent, and claims 1–5 of the ’417 patent are unpatentable. Because substitute claims 29, 31, and 32 of the ’637 patent and claims 3 and 4 of the ’199 patent are directed to patent-ineligible subject matter and lack written

³ Because we conclude that the substitute claims are not directed to patent eligible subject matter, we may reverse the Board’s grant of Rideshare’s motion to amend on that independent ground. We also conclude that the substitute claims are unsupported by the original disclosure, because we do not find support for the scenario described in the substitute claims, where a new *indicator* is generated in response to a notification signal when the vehicle is within a predetermined distance of a particular location. The original disclosure merely identifies two alternative scenarios: one where the system generates another indicatory signal when the driver approaches a location, and a second scenario when the driver manually generates another indicator. See J.A. 1809, ¶ 30. For that reason, too, the Board’s grant of Rideshare’s motion to amend was improper.

description support, we reverse the Board's partial grant of Rideshare's motion to amend.

AFFIRMED-IN-PART AND REVERSED-IN-PART

COSTS

Costs to Cross-Appellant.