

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* WILLIAM P.C. HO

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Appeal No. 2002-0086  
Application No. 09/053,880

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ON BRIEF

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Before JERRY SMITH, FLEMING, and BARRY, *Administrative Patent Judges*.  
BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1-14. The appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal concerns "transportation scheduling."  
"Transportation scheduling is the process of planning how to move items from one location to another location using a fleet of carriers . . . under a set of restrictive constraints." (Spec. at 1.) An example of transportation scheduling is scheduling wheelchair-bound customers who request round trip transportation from home to

medical appointments, shopping, and community centers. A fleet of vehicles must provide service under constraints such as honoring a requested pickup time, dropping the customer off no more than sixty minutes before his appointment, and planning for slower travel speed during rush hours. (*Id.*)

Transportation scheduling takes a collection of trip requests as its "subgoals" and a fleet of vehicles as its resources. The scheduling constructs a "trip manifest" for each vehicle. The trip manifest is an ordered sequence of stop events. Each event has an associated location (either pickup or dropoff) and an assigned time. (*Id.*)

Accordingly, the appellant's invention schedules trips using vehicles, each vehicle having a trip manifest. A matrix that delimits which of the vehicles is usable with which of the trips is first generated. Next, a best trip of the trips to be scheduled is determined. A best vehicle from the set of vehicles for accommodating the best trip is then resolved. A best insertion pair comprising the best vehicle for the best trip is determined. An appropriate trip manifest is updated to include the best insertion pair. Finally, the matrix is updated to reflect the scheduling of the best trip to the best vehicle. The preceding steps are repeated until all the trips have been scheduled. (*Id.*, *abs.*)

A further understanding of the invention can be achieved by reading the following claim.

1. An improved transportation scheduling method of scheduling a plurality of trips  $T_1-T_n$ , using a plurality of vehicles  $V_1-V_n$ , each of said plurality of vehicles having a trip manifest, said method comprising:

(a) generating a usability matrix that determines which of said plurality of vehicles  $V_1-V_n$ , is useable with each of said plurality of trips  $T_1-T_n$ , said usability matrix having along one axis said plurality of trips  $T_1-T_n$ ;

(b) determining a best trip of said plurality of trips  $T_1-T_n$  to be scheduled next;

(c) determining a best vehicle from said plurality of vehicles  $V_1-V_n$  for accommodating said best trip;

(d) determining a best insertion pair into said trip manifest of said best vehicle for said best trip and updating said trip manifest to include said best insertion pair;

(e) updating said usability matrix to reflect the scheduling of said best trip on said best vehicle and removing said best trip from said plurality of trips  $T_1-T_n$ ;

(f) repeating steps (a)-(e) until all of the trips in said plurality of trips  $T_1-T_n$  have been scheduled; and

(g) having said plurality of vehicles  $V_1-V_n$ , execute their respective said trip manifests.

Claims 1, 2, 4, 6, 7, 9, 10, 12, and 13 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,832,453 ("O'Brien"). Claims 3, 5, 8, 11, and 14 stand rejected under 35 U.S.C. § 103(a) as obvious over O'Brien.

## OPINION

Our opinion addresses the rejections in the following order:

- anticipation rejection of claims 1, 2, 4, 6, 7, 9, 10, 12, and 13
- obviousness rejection of claims 3, 5, 8, 11, and 14.

### *Anticipation Rejection of Claims 1, 2, 4, 6, 7, 9, 10, 12, and 13*

Rather than reiterate the positions of the examiner or the appellant *in toto*, we address a point of contention therebetween. The examiner asserts, "O'Brien clearly states that trips are re-allocated until an optimum travel scheme is determined (See Col. 11, lines 3-9)." (Examiner's Answer at 6.) The appellant argues, "[i]n the O'Brien patent, there is absolutely no teaching that the vehicle may have its routing changed. Thus, the O'Brien patent cannot teach the step of 'updating said trip manifest'." (Appeal Br. at 7.)

"Analysis begins with a key legal question -- *what is the invention claimed?*" *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). "Claims are not interpreted in a vacuum, but are part of and are read in light of the specification." *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116, 1 USPQ2d 1563, 1566 (Fed. Cir. 1987) (citing *Hybritech Inc. v. Monoclonal Anti-bodies, Inc.*, 802 F.2d 1367, 1385, 231 USPQ 81, 94-95 (Fed. Cir. 1986); *In re Mattison*, 509 F.2d 563, 565, 184 USPQ 484, 486 (CCPA 1975)).

Here, claim 1 specifies in pertinent part the following limitations: "[a]n improved transportation scheduling method for scheduling a plurality of trips  $T_1$ - $T_n$ , using a plurality of vehicles  $V_1$ - $V_n$ , each of said plurality of vehicles having a trip manifest, said method comprising . . . determining a best insertion pair into said trip manifest of said best vehicle for said best trip and updating said trip manifest to include said best insertion pair. . . ." The appellant's specification defines the "trip manifest" as follows. "A manifest is an ordered sequence of stop events. Each event has an associated location (either pickup or dropoff) and an assigned time." (Spec. at 1.) Reading "trip manifest" in light of the specification, the limitations require dynamically updating a vehicle's trip manifest, i.e., its schedule of pickups or dropoffs, in response to the scheduling of an individual trip.

"Having construed the claim limitations at issue, we now compare the claims to the prior art to determine if the prior art anticipates those claims." *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (citing *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715, 223 USPQ 1264, 1270 (Fed. Cir. 1984); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548, 220

USPQ 193, 198 (Fed. Cir. 1983); *Kalman v. Kimberly-Clark Corp.*, 713 F.2d760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983)). "[A]bsence from the reference of any claimed element negates anticipation." *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Here, "[t]he examiner believes that . . . [the claimed] 'vehicles' . . . are equivalent to [O'Brien's] 'travel carriers'. . . ." (Examiner's Answer at 6.) The travel carriers include United Airlines, American Airlines, and Delta Airlines. O'Brien, col. 4, ll. 31-47. We agree with the appellant that "in the O'Brien patent, predetermined travel links presumes a predetermined trip manifest for each of the vehicles. In the case of O'Brien, the airlines that serve as the vehicles have pre-scheduled flights that connect predetermined points at predetermined *times*." (Reply Br. at 2.) The reference implies the use of such trip manifests by referring to "the scheduled departure and arrival time for each travel service, . . . the number of travel services offered between a particular travel origin and a particular travel destination, whether a particular travel service requires a connection or stop-over, and if so, the connection or stop-over time. . . ." Col. 3, ll. 48-55.

We are unpersuaded, however, that the airlines dynamically update their trip manifests in response to the scheduling of an individual trip. To the contrary, we agree

with the appellants that "[j]ust like applicant cannot call United Airlines and purchase a ticket from an arbitrary point A to an arbitrary point B at a certain time, the O'Brien invention cannot and does not allow a user (the passenger) to dictate the time and destination of an airplane. In other words, the trip manifest for O'Brien is fixed by the transportation provider. . . ." (Reply Br. at 2.)

The absence from the reference of dynamically updating a vehicle's trip manifest in response to the scheduling of an individual trip negates anticipation. Therefore, we reverse the anticipation rejection of claim 1, and of claims 2, 4, 6, 7, 9, 10, 12, and 13, which depend therefrom.

*Obviousness Rejection of Claims 3, 5, 8, 11, and 14*

"In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "A *prima facie* case of obviousness is established when the teachings from the prior art itself would . . . have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, because O'Brien cannot and does not allow a passenger to dictate the time and destination of an airplane, we are unpersuaded that teachings from the prior art itself would have suggested dynamically updating trip manifests in response to the scheduling of an individual trip. Therefore, we reverse the obviousness rejection of claims 3, 5, 8, 11, and 14.

#### CONCLUSION

In summary, the rejection of claims 1, 2, 4, 6, 7, 9, 10, 12, and 13 under § 102(e) is reversed. The rejection of claims 3, 5, 8, 11, and 14 under § 103(a) is also reversed.

REVERSED

JERRY SMITH  
Administrative Patent Judge

MICHAEL R. FLEMING  
Administrative Patent Judge

LANCE LEONARD BARRY  
Administrative Patent Judge

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