

Case IPR2024-00850
U.S. Patent No. 11,472,632

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Exotec Product France SAS,
Exotec North America Inc., and
Exotec Product USA Inc.,
Petitioners

v.

Opex Corporation,
Patent Owner

Case IPR2024-00850

U.S. Patent No. 11,472,632

OPEX CORPORATION'S
PRELIMINARY SURREPLY

Mail Stop Patent Board
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

I. RAIZER'S TERMINALS ARE LIMITED TO THE "BLUE BOX" POSITIONS

Raizer discloses shelving units having two ends (i.e., a front end and a far end) with multiple vertical rails placed along the shelving units. *See* EX 1005, Figure 12. Among the vertical rails, only the vertical rails at the front end, as illustrated by the **blue rectangles** in annotated Figure 1 below, have terminals 44 (*see* Fig. 8A below) that allow robots to climb up from the floor to the shelving units. *See* POPR, 10-11; EX1005, ¶111; EX2001, ¶55.

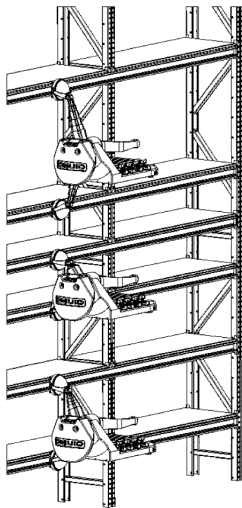


Fig. 12A

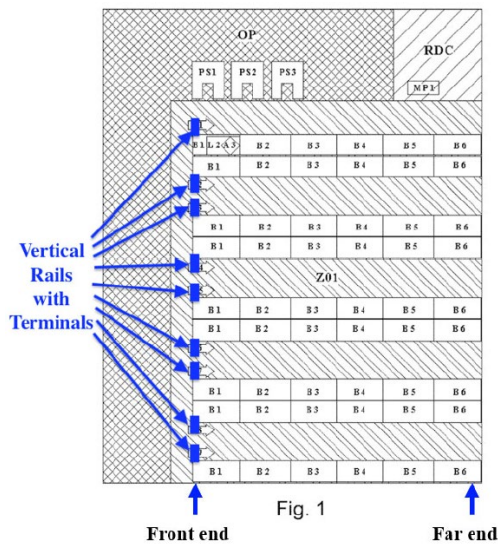


Fig. 1

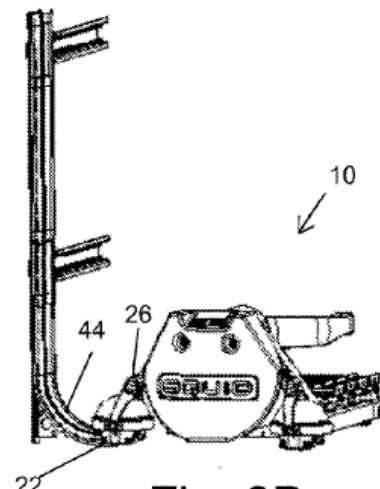
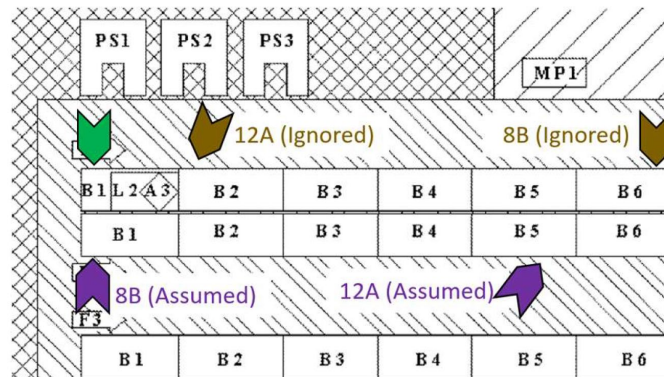


Fig. 8B

EX1005, Figure 12A, Figure 1 (annotated), Figure 8B.

Petitioner argues that “Raizer *does not limit* which vertical rail a terminal may be attached and *never* confines terminal locations to ‘front end’ positions of the storage racks.” Prelim. Reply, 3 (original emphasis). At the same time, Petitioner makes the counterargument that, based on the view illustrated by Figure 8B, the terminals *are precluded* from being in certain locations, such as the

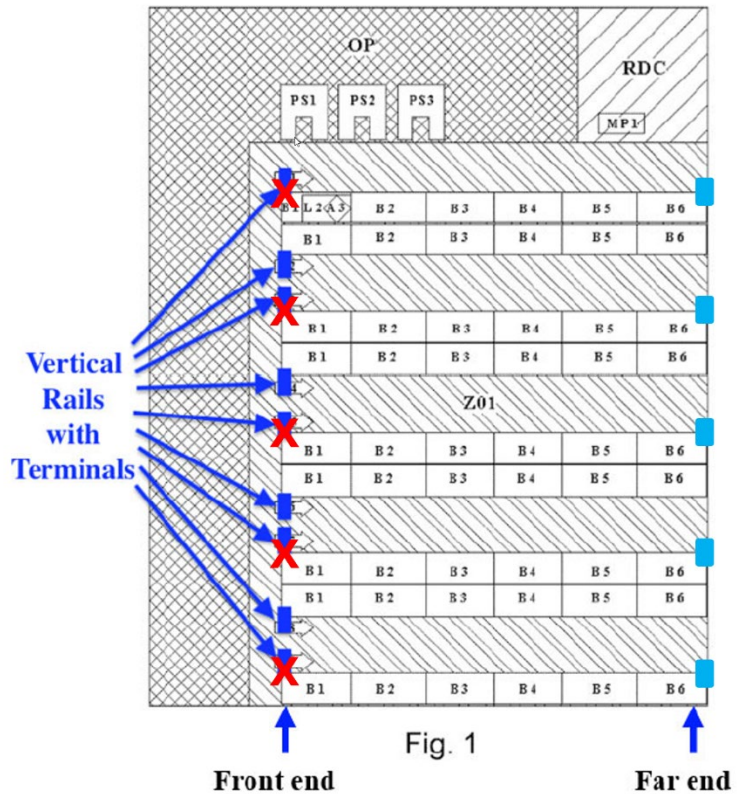
location shown in green arrow below. *See* Prelim. Reply, 4 (“The horizontal rails depicted in Fig. 8B extend rightward (rather than leftward relative to the vertical rail *thereby precluding* positioning at the **green arrow**. ...”).



Id., 3 (EX1005, Fig. 1 annotated by Petitioner). In other words, Petitioner is arguing on one hand that “Raizer *does not limit* which vertical rail a terminal may be attached,” Prelim. Reply, 3 (original emphasis), while simultaneously arguing that Raizer *precludes* placement of terminals in certain locations. *Id.*, 4. Petitioner cannot have it both ways.

According to the Petitioner, Raizer “suggest[s] positioning [a terminal] at **8B (Ignored)**.” *Id.* In other words, applying Petitioner’s arguments to the entirety of the floor plan shown in Figure 1 below, Petitioner is arguing that the terminals can *only* be located in locations shown by the **blue** and **cyan** rectangles. Indeed, Petitioner does not argue that additional terminals are attached to any of the other vertical rails located between the two ends of the storage racks.

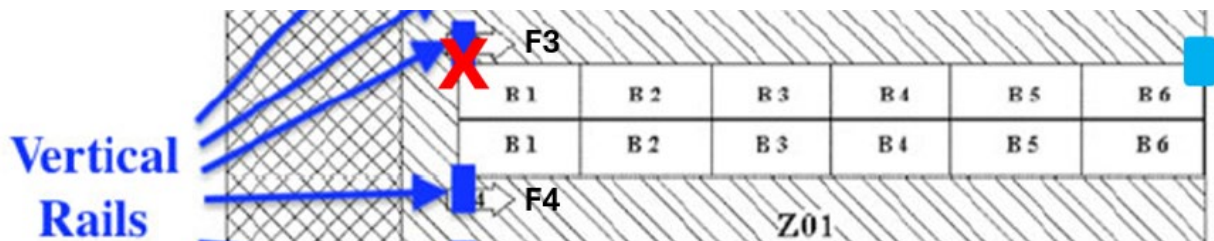
That is unsurprising because such additional terminals would have frustrated Raizer's primary principle of operation that is based on its "anchor point navigation"... [which] use[s] *less accurate sensing and motions when travelling on the floor* in order to arrive at the designated



destination as rapidly and efficiently as possible and employ dedicated algorithms and *more precise sensing only when near* anchor points, i.e., fixed specific locations in the warehouse such as *terminals* (locations at which the robot leaves the floor and climbs a vertical rail of the shelving system).” EX1005, ¶¶80; EX2001, ¶¶92. As discussed in the POPR, Raizer's use of “anchor point navigation” is an essential feature of Raizer's system that distinguishes Raizer's system from other existing systems. See POPR 22-28; EX1005, ¶¶79-80.

Moreover, Petitioner's assertion that terminals are placed only at the locations identified with **cyan rectangles**, and not at the front end (i.e., **blue rectangles** with **red X**) is misplaced because a POSITA would have readily recognized that it would

be both more (1) time- and (2) energy-consuming to store/retrieve each item from a shelf. The robot would need to unnecessarily travel two aisle lengths on the floor for going to and returning from each terminal location. For example, focusing on just the aisles F3 and F4 below (reproduced below), in order for the robot to switch back and forth between aisles F3 and F4, Petitioner's proposed placement of the terminals would have the robots repeatedly travelling the entirety of the aisle, whereas placing the terminals for both aisles F3 and F4 would allow the robot to move between the two aisles in a much more efficient manner (i.e., just near the front).



In sum, a POSITA would have understood the terminals to be located only near the “front end” of the aisles given (1) the details shown in Figures 7, 8 and 12, (2) the intended purpose of Raizer, and (3) the loss of time/energy consumption that would have been expended to place one terminal on the far end of the warehouse and another terminal at the front end of the warehouse.

Finally, Petitioner's reliance on paragraphs 80 and 85 of Raizer is also of no avail. Prelim. Reply, 3. Paragraphs 80 and 85 merely state that the “terminals” are at designated (e.g., fixed) specific, locations in the warehouse. And the only

designated locations for terminals disclosed in Raizer are in connection with Figures 7A and 8A-8G, which a POSITA would have understood to be at the front end of the aisles. *See* EX2001, ¶¶55, 60.

II. RAIZER’S ROBOT TRAVEL PATHS ARE LIMITED TO GREEN AREAS

With regard to Petitioner’s second argument, Petitioner appears to concede that if the **blue** locations are the only locations where robots can enter the vertical rails, then Raizer’s robots are limited to traveling along ground in the **green** areas and traveling along the shelves in the **red** areas. Prelim. Reply, 4 (“This unsupported view of Raizer’s travel paths *naturally flows* from the unfounded assertion that the **blue** locations are the only locations where the robots can enter the vertical rails”).

Finally, Petitioner argues that Raizer’s robots “‘can be steered by its control system to any location on the floor of the warehouse...’, which necessarily includes the purported ‘restricted’ red areas.” *Id.* (citing EX1005, ¶104). But that passage of Raizer is merely directed to the fact that “the robot is completely autonomous and *can* be steered by its control system to any location on the floor of the warehouse *without the use of a track, embedded wire or any other arrangement to guide it.*” *Id.* In other words, Raizer does not disclose that Raizer’s robots would necessarily drive to every location in the warehouse. Rather, Raizer explains that its robots are autonomous and *can* be steered to any location (e.g., wherever an anchor point is placed), without tracks, wires or other arrangements.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that a complete copy of Patent Owner's Preliminary Surreply was caused to be served on counsel of record for Petitioner by filing this document through P-TACTS and by sending this document via electronic mail to the following addresses:

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