

Car wheels that go in surprising directions could make parking actually fun

30 June 2016, by Nancy Owano



(Tech Xplore)—Ryan Mandelbaum in *Popular Science* is just one of a number of tech sites taking a look at wheels that allow the driver to move the car any which way.

Contributing Editor Andrew Liszewski, *Gizmodo*, also took note of how Liddiard's Toyota Echo could "move in any direction, spin 360-degrees, and slide into a [parking spot](#) making parallel parking easier than actual [driving](#)."

William Liddiard is the inventor of a set of wheels that can move his car not only forward but sideways too. The one task drivers usually hate is parking. The advantage that easily comes to mind about these wheels is using the set in [parallel parking](#).

Another advantage, said Mandelbaum, would be in edging your car "closer to the drive-thru window" so that you do not have to reach out so far.

In a video that he watched, "the wheels scoot the tiny Toyota Echo around the driveway forward, backwards, left, right and in circles. The car moves forward and backwards the regular way, and left/right when the tire tubes rotating inwards or

[outwards](#)."

But wait, how do they actually work? Matthew Reynolds in *Wired*: "He doesn't give any details about the technology behind his creation, but other omnidirectional wheels work by having small discs around the outside edge of the wheel which allow the wheel to slide sideways as well as be driven forwards and backwards. Such wheels have been around for nearly a century and are quite common in small autonomous robots but they've never been fitted to widely available everyday [cars](#)."

No, it is not the first of its kind, in that "The concept of an omni-directional wheel isn't exactly new, since several tires like this exist specifically for construction vehicles that need to move in specific ways, but this particular model stands out," said Catrina Dennis in *Inverse*.

Liddiard Wheels are powered by 24,000 pounds of torque applied directly on the tire, said the video notes.

Liddiard said they can be bolted on to any car. "This is a world first bolt-on application for anything with [wheels](#)."

Earlier this year, in March, *The London Free Press*, took a look at Liddiard's work. "Omni-directional wheels, or mecanum wheels, have been around for the past 50 years. Companies such as Honda and Toyota have already invented several different versions. Liddiard said his wheel has a better design, and can function on all [surfaces](#)."

What's next? Liddiard said in the video's notes that "These are proof of concept prototypes to show that they work. Finished wheels will be refined to target application requirements."

Liddiard, who spoke with *Inverse*, said, "I would like to see [the [wheels](#)] used in every [market](#)." He gave as examples in material handling, mobile robotics,

personal mobility and autonomous cars. "As for taking the product to market, Liddiard is more than ready," wrote Dennis. Liddiard said, "Ultimately I will bring this to market myself or a suitable company can obtain rights to it."

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