

TECHNOLOGY OFFER

MACHINE AND PLANT CONSTRUCTION

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OMNIDIRECTIONAL CONTINUOUS TRACKED VEHICLE

Caterpillar track system permits rotations and movements
in all directions (BB152)

THE PROBLEM

Compared with wheeled vehicles, continuous tracked vehicles are limited in their mobility. They can move forwards, backwards, drive in curves, or swivel around on the spot. However, lateral movements cannot be accomplished with the available track belts, which limits the applicability of these vehicles considerably. Developments which would enable omnidirectional locomotion with a continuous track system could previously not be retrofitted to existing track drives, besides, the planned cylindrical rollers did not have the desired driving characteristics.

THE SOLUTION

BIBA - Bremer Institut für Produktion und Logistik GmbH has developed a track drive system which transfers the properties of omnidirectional wheels (e. g. Mecanum) to a continuous track belt. Drum-shaped rolls are mounted to the top surface of the track belts in an angular arrangement. The shape of the rolls accounts for favorable steering and driving properties with which the tracked vehicle is freely-movable in a plane. All kinds of translational and rotational motions are feasible, even combinations of them.

In addition, the chassis can be set to an angle and thus lift, lower, or tilt the vehicle. The invention permits both retrofitting with caterpillar treads already available and applying new treads while manufacturing is in progress.

A prototype of an omnidirectional track has already been mounted to a robot platform, thus corroborating its functionality. The inventors are searching for cooperation partners for further development and reaching market maturity.

ADVANCES AND APPLICATIONS

- Enhanced mobility of track vehicles in open terrain
- Retrofitting of already existing tracks
- Suited for steel and rubber treads
- Individual angular chassis orientation
- Lifting the vehicle and adjustment to difficult terrain

This invention enhances the employment options of track vehicles and is therefore of interest to manufacturers of construction machinery and robots.



The drum-shaped rolls are mounted
in an angle to the caterpillar track
drive

FIELD OF APPLICATION

Construction machinery, robots,
farm machines, work platforms

KEYWORDS

Tracked vehicle, chassis

PROPERTY RIGHTS

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AN INVENTION OF

BIBA - Bremer Institut für Produktion
und Logistik GmbH, Germany

BIBA

InnoWi GmbH
Fahrenheitstraße 1
28359 Bremen
Germany
Tel.: 0421- 96 00 7 - 0
mail@innowi.de
www.innowi.de