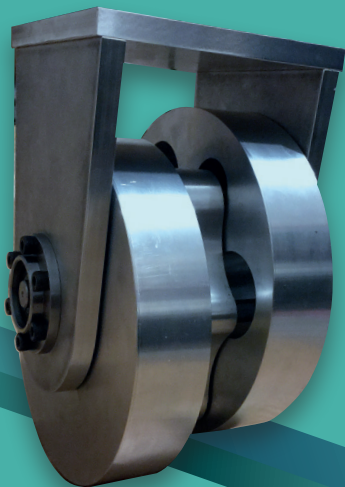




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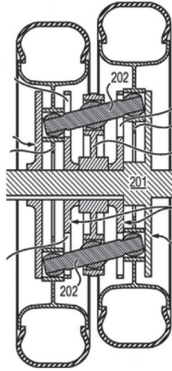
SELF-ADAPTING INDUSTRIAL CASTOR WHEEL

Patent pending, application no. FR2111969 - EP22206198.8

CONTEXT

A conventional dual-wheel system rigidly interconnects the wheels mounted in parallel, on the same axis of rotation. It decreases the contact pressure with the ground on even terrains. On uneven, rough or obstructed terrains, not all the wheels in a dual-wheel system are in contact with the terrain, resulting in a high contact pressure, which limits the usability of the dual-wheel system.

THE INVENTION



The wheels of the dual system can move relative to each other. When one wheel passes over an obstacle, the second wheel remains in contact with the ground.

The load and the transmitted power are thus equally distributed on both wheels, and

the vertical displacement of the vehicle chassis is reduced by half.

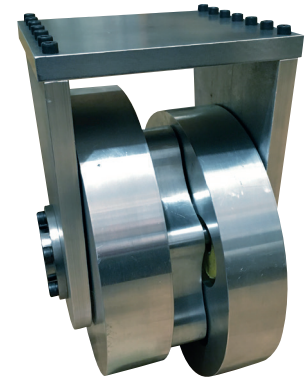
A device providing stiffness and damping realigns the wheels after obstacle clearance.

APPLICATION

Industrial castor wheel

PROTOTYPE'S CHARACTERISTICS

- Wheel diameter: 250 mm
- Obstacle clearance ability with both wheels kept in contact with the ground: 30 mm (generally speaking, about 10% of the wheel diameter)
- A stiffness and damping device realigns the wheels after obstacle clearance, and dampens shocks
- The designed castor wheel allows the transmission of a propulsive force
- Simple, robust design using standard components and materials
- Easily industrialized



USE

Self-adapting wheels for improved operation of industrial castor wheels on uneven floors or floors with obstacles. The wheel travel minimizes the possibility of the carrier getting stuck, while still transmitting power when needed.

6 GENERIC ADVANTAGES

1

Increases the load capacity and the torque able to be transmitted to the wheel.

2

Uses standard and economical tires and rims.

3

Increases the life of tires and limits the associated pollution.

4

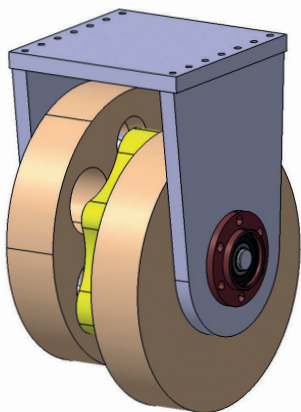
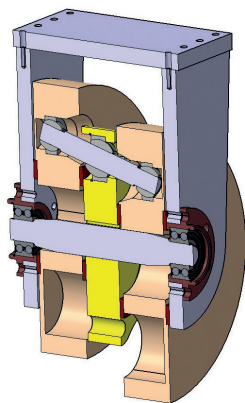
Improves obstacle clearance capability.

5

Limits soil compaction and preserves soil fertilization.

6

Increases vehicle stability and comfort.



Digital model of an industrial castor wheel with a self-adapting wheel.

Photo credits: ©ENSTA Bretagne

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PATENTS

Patent pending, application
no. FR2111969 - EP22206198.8

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