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Patent Search

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Abstract:

ABSTRACT: Title: Autonomous Guided Vehicle with Mecanum Wheel for Small-Scale Warehouses This idea is about an Autonomous Guided Vehicle (AGV) designed for warehouses. The AGV uses Mecanum wheels, which allow it to move in all directions (forward, backward, sideways, and rotate). This makes it easy to navigate through aisles and tight spaces without needing to turn or change direction. It has ultrasonic sensors to detect obstacles, an MPU-9250 IMU to track its orientation, and an RP create maps of its surroundings. These sensors help the AGV move on its own and avoid obstacles in realtime. The AGV is controlled by a Raspberry Pi 4, which processes the data from the sensors and controls the motors using an L298N motor driver. The design is modular and scalable, meaning it can carry different loads and adapt to different warehouse sizes. This AGV provides a cost-effective and flexible solution to automate material handling in small warehouses, reducing the need for manual labor and increasing efficiency. It can plan its own path and move automatically, making it a great choice for businesses that want to automate their material handling in an affordable way. Applications include automating tasks in small warehouses, logistics centers, retail stores, and manufacturing units. The AGV can be used to move goods, organize and transport materials in tight spaces, providing a scalable and affordable solution for many types of businesses.

Complete Specification

Description:DESCRIPTION:

Field of the invention:

[0001]

This idea Autonomous Guided Vehicle with Mecanum Wheel for Small-Scale Warehouses relates to the field of automation and material handling systems, specifically focusing on autonomous guided vehicles (AGVs) designed for small-scale warehouses. It introduces an AGV equipped with Mecanum wheels to achieve omnidirectional movement, enabling efficient navigation in constrained spaces, including narrow aisles and tight corners.

This idea addresses the challenges of maneuverability, scalability, and affordability in warehouse automation. With its lightweight and modular design, the AGV supports flexible payload configurations, catering to diverse material handling needs. The use of Mecanum wheels enhances agility, allowing seamless motion in multiple directions without requiring complex turning mechanisms.

Background of the invention:

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