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Design and Fabrication of Stair Climbing Trolley

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Abstract: *This project presents the design and fabrication of a stair-climbing trolley aimed at simplifying the transportation of goods across stairs. The trolley uses an innovative wheel mechanism and powered system to enable smooth movement up and down stairs, improving efficiency and reducing manual effort. Key features include a durable yet lightweight structure, ergonomic handling, and stability during operation. The project demonstrates a practical solution for industries like logistics and healthcare, enhancing mobility and ease in transporting items across multi-level environments.*

Introduction: The movement of goods across multi-level buildings is often hindered by stairs, making it challenging to transport heavy items. Traditional trolleys are ineffective on stairs, which leads to increased manual effort and inefficiency. This project aims to design and fabricate a stair-climbing trolley that can easily ascend and descend stairs while maintaining stability and reducing user strain. By integrating a specialized wheel system and motorized assistance, the trolley offers a practical solution for industries such as logistics, healthcare, and retail, where stairways are common obstacles. The goal is to provide a lightweight, durable, and efficient tool for safer and more efficient material handling.

Keywords: stair-climbing trolley