MTE 481 - Design Project

Object Avoidance and Navigation for Powered Wheelchairs

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Introduction

Need Statement

Powered wheelchairs can improve the mobility of the physically handicapped, but alertness and control are required for safe operation. Additional assistive technology is needed in order to afford the same benefits to the more severely disabled.

Potential Impact

- Risk of collisions between powered wheelchairs and patients is a serious concern.
- Significant quantity of patients denied powered wheelchairs due to relatively minor impairments.

Objectives and Constraints

- Risk of human harm must be made negligible.
- Must be tolerant of user error.
- Should tolerate a wide variety of operating environments.
- Cost should be minimized.
- Electrical power usage should be minimized.
- Should be physically robust.

Criteria

Potential Solutions

Potential Solution 1 Detail

Potential Solution 2 Detail

Patent Search Results