

ADVANCED WHEEL CHAIR

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ABSTRACT

In the society the mobility of physically challenged people is great concern. This paper focuses on a mobility aid for the physically challenged people for their mobility in various areas. Switch controller based mobility aid wheelchair has been designed for the all possible direction of movements such that left, right, straight and back. The DC geared motors are used for the movement of the wheels. As the wheelchair has been named as 'Advanced Wheel Chair'. This project gain power from the lead acid batteries which are rechargeable and available which make it more powerful. The proposed wheelchair system has the idea to run both in indoor and outdoor environments. Moreover the wheelchair has been designed to run fast with good great break system which will make the physical challenged people to feel better during critical and accidental case. This advanced wheel chair also can be also use in relax time and in night for rest and another work. The light system and sound system is also used for to make them more comfortable.

KEYWORDS: Advanced Wheel Chair, Switch controller, DC motors, Rechargeable batteries, Light system, Sound system.

I. INTRODUCTION

This Advanced Wheel Chair is a chair fitted with wheels and used some electronic devices for to make it more useful and advance. The Advanced Wheel Chair comes in variations allowing either manual propulsion by the seated occupant turning the rear wheels by electric propulsion by motors or by hand. There are break system beside the seat to allow for different individuals to push the wheel chair. This advanced wheel chair will be use by the people where walking is difficult or impossible due to injury, disability or illness. People who have difficulty sitting and walking often make use of this project. This advanced wheel chair incorporates a seat, foot rests and four wheels: two, wheels at the front and two wheels at the back. The two larger wheels in the back usually have hand-rims; two metal or plastic circles. This wheelchair assists people to become more mobile and independent. This wheel chair will use for many reasons. This wheel chair has also a place for bag to carry vegetables and some another useful thing etc. It is also foldable. The chair seat size, seat-to-floor height, footrests/leg rests, adjustable backrests, controls, and other many features can be customized according to need of users. It will safe and much useful in all condition for user.

II. CONCEPT GENERATION

Based on study, data analysis and questionnaires, the below list briefly illustrates essence of needy's voice;

1. Improve back rest design
 2. Adjustable and cushioned foot rest
 3. Improved braking design
 4. Multiple use
 4. Less weight
 5. Less cost
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Technical voice:

1. Change of material
2. Ergonomic design
3. Functionality
4. Usability
5. Weight
6. Safety
7. Economic

III. WORKING

This wheelchair has the following 7 basic parts:

1. Motor
2. Battery
3. Drive
4. Controller
5. Brake System
6. Light System
7. Carry Bag

This advanced wheel chair uses 2 motors of 12V, 2 heavy battery of 12V etc. These motors produce more power with the help of rechargeable battery. The battery gives sufficient power to run and move the wheel chairs. Motors help in rotation of wheels. Carry bag use for carry useful things. Brake system helps for stopping the wheel chair. The brake system controls the speed of wheels also. For the movements of wheel chair there is also used switch button which works well. This chair is motorized and manual both. The whole system is connected with a wiring system to the motor and the wheelchair all-important control panel.. Light system use for ride in night. Sound system is use for produce noise which aware from accidents. All parts of this system work very well in a sequence order with their proper work.

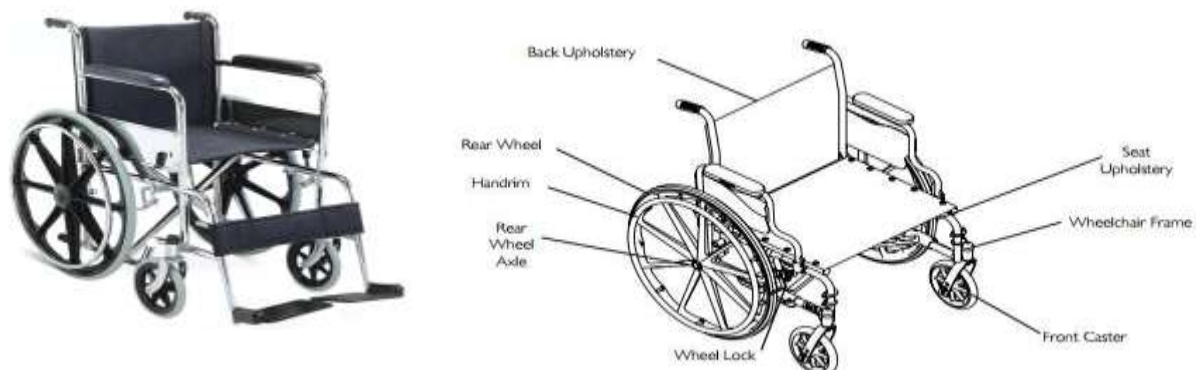
IV. FIGURES

Fig-1



Fig-2

When Use:

1. During Emergency like:

- Road Accidents
- Fire Accidents
- Air Accidents
- Maternity emergency
- Physical Disorders

V. CONCLUSION

This paper presents advanced method to use wheel and it focus in all areas for to make wheel chair much advance and useful. Also it reviews other smart systems like monitoring and safety systems. This advanced wheel chair is powerful and helpful to make easy the daily life activities and to give more independent mobility for people with different types of disabilities. Future work should maybe focus more on the add-on approach which gives flexibility in configurations of sensors, interface, and input devices based on each individual users need s and budget. Creating the wheelchair friendlier can be also added in future like entertainment and social communication facilities etc. might be added to the wheelchair. Health monitoring, first aid, muscle relaxing and rehabilitation tools might be considered as useful add-ons too.

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