

### **Disadvantages of this wheelchair**

- A person with complete paralysis cannot operate this wheelchair.
- It puts a lot of strain to the chin, mouth or head.
- The repair and maintenance of this wheelchair is hard.
- The size and weight of this wheel chair is a huge problem, as it makes moving the wheelchair a difficult task.

## **2.5 DISADVANTAGES OF CURRENT SYSTEM**

- The single greatest disadvantage of manual wheelchair is the possibility of contracting an upper body repetitive strain injury.
- Less comfort
- Cannot be travelled to longer distances and at high speed without the user getting fatigued.
- Physically challenged people find it difficult to manually propel the wheelchair, so they always need another person to help them travel.

## **2.6 ADVANTAGES OF EYE CONTROLLED WHEELCHAIR**

- A person unable to move hands and legs can use this and become independent.
- Reduced manpower required as there is no need for joystick
- User friendly, with no requirement of prior knowledge.
- It is portable and hence can be placed anywhere.
- Can be used by completely paralyzed patients to move about their own.

### **2.3. MANUALLY CONTROLLED**



*Fig 2.3 Manually controlled wheelchair •*

Hands are used to move the wheelchair.

- The user has to use their hands to move the wheelchair on their own.
- Another person has to move the wheelchair if the person using it cannot move the wheelchair on their own.
- There is no additional technology used in these kinds of wheelchairs.
- The person does not have to worry if the terrain is bumpy like other powered wheelchair.

#### **Disadvantages of manually controlled wheelchair**

- A person who can't move their hands cannot operate the wheelchair on their own.
- An additional help is needed if the person can't operate the wheel chair on their own.
- This type of wheelchair requires strain to move the wheelchair.

### **2.4 CHIN, MOUTH OR HEAD OPERATED JOYSTICK CONTROL**



vulnerable against noise. Other voices which come from different system. [4]

### **Method and Apparatus for monitoring the position of the eye**

It utilizes other normal movement organs to operate computer input. Head, foot, etc. can be used to control computer input. It can have the option to allow for more physical support, including adjustable seating such as tilt and recline. Motion based wheelchair users can also adjust the height of the chair to see their environment more clearly. But uses human effort to navigate like joystick, etc., for a handicapped with any of the organs failed is not useful. [5]

### **Wheelchair guidance strategies using EOG**

It uses search coil method which uses induced voltage with coil including in contact lenses attached to user's eyes. Coil signals provide a better signal stability. Therefore, coil signals are better suited for the analysis of fine details of eye movements. Burden to user, here measuring time is limited to approximately 30 to 60. They have limited Lifetime. [6]