

# Wheel Chair Cum Stretcher With Fold (By Using Three Linkages )

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**Abstract-** *The disabilities can be empowered and enable them to live a normal and independent life can satisfy the need of disable people rather than old and conventional ones ,an with the help of wheelchair.New and modified wheelchairs Afterwards they were carried on wheels which reduced the effort of the people carrying the patients there is always, an issue faced by the attendant or nurse of transferring the patients from wheelchair to stretcher or to the medical bed. Understanding the various issues regarding the mobility equipment and introducing a better design will be an asset for the, medical field for disabled individuals. The need for a wheelchair cum stretcher to facilitate the disabled patient's mobility and to provide a novel medical equipment for use in the hospitals. Wheelchair Convertible Stretcher which is a boon to the medical field. It is so made that it could be maintained and operated easily either by the patient or by the attendant according to the comfort of the patient. Our study shows that it is possible to save 50% space by the Wheelchair Convertible Stretcher design. The product will thus likely be an efficient mobility aid in hospitals.*

**Keywords-** Wheelchair, Stretcher, Wheelchair convertible stretcher, ambulance stretcher

## I. INTRODUCTION

Over the years wheelchairs have evolved rapidly from the manual wheelchairs to the powered wheelchairs. But still these wheelchairs have not been able to satisfy the needs of the disabled people. It is therefore critical that the problems of disabled be understood and accordingly wheelchairs are developed fulfilling their needs.

In India number of disabled individuals is increasing every year. Mobility aids are useful for patients for transportation. Wheelchairs & stretchers are the most commonly used medical equipment for the transportation of patients. Understanding various issues regarding mobility equipment, the better design will be an asset for medical field and helping hand for disabled individual. The present project proposes a development of wheelchair cum stretcher with ability to transfer patients from normal staircase also with automated electronic control over stretcher cum wheelchair for movement and functioning. Self proceed wheels invention was

created enormous demand in the market and it was better helping aid for the disabled individuals.. These will be one of the walking aids which can help with impaired ability to walk using wheelchairs for the disabled peoples.

## II. INDENTATIONS

The wheelchair with stretcher mechanism is used. In case of emergency to travel the patient in ambulance for shifting of patients along with stretcher is normally done by 2 are more persons but we reduce efforts of 2 person it can done by 1 persons only .also it can be convertible into wheelchair and stretcher when we can have to lift the patients in ambulance along with stretcher to words ambulance when push the force is applied on stretcher the linkage connected to front end of wheels getting fold. Which helps to front end. Stable in ambulance also back wheel are getting closed and stretcher is moved in ambulance.

When we have to move out patient from ambulance. Pull the back end and which result in functioning position of wheel. Which is able to move as a stretcher. The stretcher get converted into the wheel chair with 3 links in which two are fixed and central link is pivoted which helps fold the leg rest central link pull the back rest and pushes the leg rest. The wheelchair is ready for function.



## III. METHODOLOGY

- The wheelchair with stretcher mechanism is basically consisting of 3 blocks for that three blocks. We get a rod of 30\*30 mm in cross section of long length.
- First of all to create a rectangular blocks we done the cutting at 45 angles of square blocks & according to block length with the help of cutter.
- Then we done the welding for joining of that piece to create an rectangular block. For the finishing purpose we done the finishing of the welded area.
- After the finishing 3 blocks the are connected with the help of higher of hinges which all owes as the motion in rotating of blocks,
- At the middle block of mechanism we joint the wheel with rod for the standard of mechanism with the help of nut and bolt so that can be easily foldable
- The for stabling of wheel rods we joint them together with the help of rods which allow rotation in one direction
- For the folding of wheel and we create an link which attached to blocks as well as to wheel rod at its both ends.
- Then after done the work of middle section for the convertible purpose of the mechanism. We have to implement can mechanism so, for that mechanism we required 3 rod.2 rods are higher in size and one is shorter.
- The shorter rod is pivoted at middle block at right side of mechanism. And both ends of stretcher one longer rod connected with the help of nut and bolt so they can allow motion.
- The free end of both longer rods are connected to respective block of each side. Because of this we can achieve an convertible purpose f that mechanism.
- After done the all work we put the mechanism for powder coating after the powder coating after the powder coating. We done the cutting of plywood with respective to the blocks and the plywood are attached to respective blocks with the help of screws. Over that plywood. We attached a cushion.

#### IV. DESIGN REPORT

<i>Sr. No.</i>	<i>Part Name</i>	<i>Dimensions/ Specifications</i>	<i>Unit</i>
1.	Back Rest	L=18" W=25"	Inches
2.	Main Rest	L=25" W=25"	Inches
3.	Leg Rest	L=21" W=25"	Inches
4.	Legs	L=25"	Inches
5.	Lock plate	L=7"	Inches
6.	linkage	L=19" L=20"	Inches

#### V. CONCLUSION

The conversion feature of this device makes patient transfer easier. This device combines the concept of patient mobility and patient transfer. We conclude that, on the basis of our hospital, old-age home and market survey, we made a best design of wheelchair and bed for old age home people. It reduces the cost, the floor space and complexity of having two individual products for individual needs without compromising the original products comfort.

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