

Fabrication of Smart Therapy Wheelchair with Bed cum Stretcher

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Abstract— We all have seen the wheel chair that normally the patients or the handicapped people use, it needs someone to push or the person on the chair has to apply force directly on the wheels which make him tired and strained and if the patient want to go to the table he has to get down and shift to other chair. Thus to eliminate these problems of a patient or a handicapped person we have designed a therapy wheel chair. Mobility of physically disabled persons is a concerning social issue now a days. Various wheelchairs are commonly available for disabled people as a mode of transportation. Our aim is to fabricate a low cost therapy wheel chair for the patient to facilitate the disabled patient's mobility and to provide novel medical equipment for use in the Indian hospitals.

Keywords: Mobility Aid, Stretcher, Wheel chair, Design and Analysis

I.— INTRODUCTION

It's a widespread nature of a human being to run severally as a by born nature. Superior stage of spiral cord damage, accident and brain as well as nervous system anarchy are such types of cases which causes inhabitants to loss control of arms or legs or together arms. In addition, physical disorder at the time of born additionally makes individuals immobilize. However, wheelchair is that the way to build this cluster to having the ability to maneuver. But, within the occasion of higher limb injury, it restricts some to the use of manual wheelchair, which is operated by arm's muscular strength. So, they need to rely upon others to administer the manual force to move the wheelchair. To remove this enslavement and progress the feature of their life, present science created a progression on wheelchair history, which eliminates some of the mobility problems. Electric battery-powered chair is that the answer, that is often branded as Automatic chair. The wheelchair where an electric motor moves the chair in spite of labour intensive power as known as motorized wheelchair, electric wheelchair. As associate initiative approach, a motor obsessed electronic structure was planned to renovate the manual one. A few styles for an electrical wheelchair based on manual one was 1st printed by associate American discoverer, named as George Westinghouse in 1914. However, a bunch of engineers leaded by George Klein are considered because the discoverer of 1st electrical hopped-up wheelchair. Then in 1956, a corporation named as mountain peak & Jennings started the industrial production of electrical wheelchair. From the invention of power wheelchair, several researchers planned completely different strategies to manage the wheelchair. Transferring the patients from wheelchair to stretcher or to the bed is always an issue for the patients and for the attendants as well. This may even results in musculoskeletal is orders to those who are not trained to do so especially, when it comes to the caretakers. So there's a desire for a wheelchair seminal fluid stretcher to facilitate the

disabled patient's quality and to produce novel medical instrumentation to be used within the Indian hospitals.

At present, the composition of a massage chair generally includes a mechanical part and an electrical part which are made of a metallic material with electric conductivity. The two parts are connected by a wire when the power source is used. If the electrical insulation is damaged the two parts will become exposed conductive body, which leads potential danger. If the electrical insulation of the massage chair is damaged and the power cannot be disconnected in time, the user's life will be dangerous with touching the exposed conductor. If the bare conductor contact with the earth directly, it will produce a larger current and at the same time release much heat, which will likely ignite combustible materials and then cause a fire. So the electricity safety protection is incredibly necessary to the massage chair. From the perspective of electricity safety analysis, the lack of residual current protection will increase the danger of electricity safety, so it has very practical significance to design a residual current protection (RCP).

II. LITERATURE REVIEW

Accumulation of system overload knowledgeable daily over an extended amount, for months could be (or perhaps) years may cause serious health issues. Simple, quick and easy-to-administer prophylactic and therapeutic interventions not involving complicated medical procedures can bring tangible benefits for sufferers. The aim of the study was to evaluate the effectiveness and effects of a massage programme performed throughout breaks at work among persons exposed to semipermanent overload of the spinal column and areas around the spine. Material and methods: we have a tendency to studied fifty workplace staff (20 ladies and thirty men, mean age thirty four.04 years). The subjects were at random divided into associate degree experimental cluster (massage, twenty five people) and an impact cluster (25 people). The study was completed in four weeks, throughout that eight massage sessions happened (twice per week for fifteen minutes). Subjective assessment tools were used, particularly the IPAQ-short version for analysis of physical activity, Cornell system Discomfort form (CMDQ) for assessment of system pain and a survey to assess the participants' satisfaction with the massage programme. An objective assessment tool was associate degree measuring analysis of the absolute threshold (kg/cm²) in elite muscle trigger points.

The projected programme of chair massage within the geographic point tested to be effective in relieving contractor overload and discomfort of the spine and higher limbs. 2. The advantages of this methodology embody its accessibility, cost-effectiveness, simple administration in numerous places and short treatment time. It seems advisable to popularize it and increase its use in practice in the prevention of physical and mental work-related overload.