

Using TRIZ to innovate a new design in backpack

詹凱為、鄧志堅

E-mail: 322198@mail.dyu.edu.tw

ABSTRACT

As the number of colleges increase through the year, so do the college students expand significantly, which renders the huge need for the backpack. Currently innovative design for the backpack is hardly found in the academic literature, and as the issue of backpack improvement is growing important, one decides to choose the backpack as the object to study the convenience of its operation. Taiwan new model Patent M352925 is chosen in this research to study the feature of backpack. The patent title is 'backpack structure.' Using the TRIZ methods such as contradiction matrix, 9-window and evolution trend with the mind mapping and patent design around, one can improve the original patent. The original patent has components as the first shoulder strap, the second shoulder strap, two-use strap, the first connection strap, the second connection strap and the third connection strap. This research reduces the components into the first shoulder strap and the second shoulder strap only. Moreover, in the original patent the first shoulder strap and the second shoulder strap both connected to the same buckle on the top of the back side of the backpack; this research change it to that the first shoulder strap and the second shoulder strap is dis-attachable and buckle on the top of the back is divided into two buckles and are placed on both side on the top part of the back of the backpack. The study designs a backpack which can fit the need of adjusting the packing style from back style to hatchback style without too much hassle. When shifting from back style to hatchback style, one can switch the backpack to the front of the body without putting down the backpack. In such a way, one can take out the belonging from the backpack easily.

Keywords : TRIZ、mind mapping、patent design around

Table of Contents

封面內頁 簽名頁 授權書iii 中文摘要iv 英文摘要v 誌謝vi 目錄vii 圖目錄ix 表目錄x 第一章 緒論1 1.1 研究背景與動機1 1.2 研究目的2 1.3 研究範圍與限制2 1.4 研究流程3 第二章 文獻探討5 2.1 背包介紹5 2.2 TRIZ原理與方法8 2.3 專利迴避設計18 2.4 心智圖法介紹25 第三章 研究方法27 3.1 研究方法與流程27 3.2 專利檢核階段29 3.3 專利功能分析階段32 3.4 TRIZ與心智圖運用階段33 3.5 專利迴避設計運用階段42 第四章 實例結果-後背式背包肩帶之設計44 4.1 實例設計-後背式背包肩帶之改良設計44 4.2 TRIZ工具運用部分51 4.3 設計雛型呈現55 4.4 專利檢核58 4.5 小結60 第五章 結論與建議61 5.1 結論61 5.2 未來研究方向與建議63 參考文獻64 附錄一 專利檢核67 附錄二 矛盾矩陣表72

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