Development of Convertible Features in Footwear for Therapeutic Application

PROJECT REPORT

Submitted by

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in partial fulfilment for the award of the degree

of

BACHELOR OF TECHNOLOGY

in

LEATHER TECHNOLOGY

ALAGAPPA COLLEGE OF TECHNOLOGY

ANNA UNIVERSITY: CHENNAI 600 025

MAY 2024

BONAFIDE CERTIFICATE

Certified that this project report "**DEVELOPMENT OF CONVERTIBLE FEATURES IN FOOTWEAR FOR THERAPEUTIC APPLICATION''** is the bonafide work of "**AKASH R (2020306003) , SURIYA M (2020306044)** and **UKESH U (2020306047)"** who carried out the project work under my supervision.

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ACKNOWLEDGEMENT

We express our sincere gratitude and thanks to the respected people for providing us the valuable advice, guidance, immense support and encouragement during thecourse of this project.

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ABSTRACT

In today's dynamic world, adaptability is key, even in therapeutic footwear. Our project focuses on pioneering the next evolution in therapeutic shoe design: the integration of convertible features. Imagine a shoe that seamlessly transitions from work to workout, from leisure to medical necessity, all while providing the utmost support and comfort.

We begin by meticulously studying existing therapeutic shoes, understanding their limitations, and identifying opportunities for innovation. Through extensive market research and user feedback, we have pinpointed the need for footwear that can accommodate various foot conditions and lifestyle demands without compromising on efficacy.

Our solution? A revolutionary therapeutic shoe with convertible features tailored to individual needs. From adjustable arch support to interchangeable insoles catering to different cushioning requirements, our shoe offers unparalleled versatility. With customizable straps for stability and breathability, users can confidently tackle their daily activities with ease.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER-1

INTRODUCTION

1.1 GENERAL

The mankind have been using leather since Paleolithic times (Stone Age).Skins which protected animals when they are alive, have been used to provide humans with protection from the weather after the death of the animal. Those skins of the dead animals served as in the second skin for the human in the freezing conditions. It is hard to imagine how we could have survived freezing winter conditions without the protection of animal hides. Throughout the ages theleather have been used for various purposes such as drums, book bindings, shoes,gloves and many more. We consider 'Leather' as a manmade marvel, which hasevolved throughout the time from using it as a shelter, clothing to a fashionable thing. Leather has made itself a permanent feature in fashion. It's protective, long-wearing qualities mixed with its obvious fashion appeal made leather a premiumfashion product.

Footwear has been crucial throughout history, starting as protection for feet in early civilizations. As societies advanced, shoes became symbols of status, craftsmanship, and style. In the modern era, they play a vital role in comfort, safety, and self-expression. Beyond function, shoes contribute to cultural identity and fashion trends. Today, the importance of footwear extends to health, with specialized designs for various activities. From early stages to now, shoes remain integral to daily life, reflecting the evolution of human needs and preferences.

1.2 FOOTWEAR

Footwear refers to the garments worn on the feet, providing protection, support, and comfort. Shoes come in various styles and designs, ranging from simple sandals and sneakers to more formal options like heels or boots. Beyond their practical use in shielding our feet, footwear has become an essential part of personal style and cultural expression. Different cultures and fashion trends influence the design of shoes, making them not only functional but also a way for individuals to showcase their identity and preferences. Whether for everyday activities or special occasions, footwear plays a crucial role in our daily lives and reflects the ever-evolving interplay between tradition and contemporary fashion.

1.3 7 BASIC STYLES OF FOOTWEAR

OXFORD

Oxford shoes are a classic and versatile style of footwear characterized by a closed lacing system, where the shoelace eyelets are sewn under the vamp (the front part of the shoe). They typically feature a low heel, a sleek and polished appearance, and a closed-throat design, providing a clean and formal look. Oxford shoes are known for their timeless elegance and are suitable for various occasions, ranging from formal events to professional settings.

Fig 1.3.1

MOCCASIN

Moccasin-style shoes are characterized by their soft, flexible construction and a distinctive stitched seam that runs around the shoe's upper, creating a distinctive "U" shape. These shoes traditionally have a flat sole and are made from supple materials such as leather or suede. Moccasins are known for their comfort and casual style, often lacking a formal structure and featuring a simple slip-on design.

Fig 1.3.2

BOOTS

Boots are a type of footwear that typically covers the foot and extends up the leg, varying in height. They come in various styles, such as ankle boots, mid-calf boots, and knee-high boots. Boots often feature a sturdy sole and are designed for both practical purposes, like protection and warmth, as well as fashion. They can be made from

materials like leather, suede, or synthetic fabrics, catering to different preferences and occasions.

Fig 1.3.3

PANTAFOLA

Pantafola" refers to a style of footwear commonly known as "slippers" in Italian. Pantafola-style shoes are typically soft and comfortable, designed for indoor or relaxed settings. They often feature a slip-on design without laces, making them easy to put on and take off.

Fig 1.3.4

COURT SHOE

Court shoes, also known as pumps, are a classic style of

footwear characterized by a low-cut front and a slip-on design. These shoes typically have a sleek and elegant appearance with a closed toe and a moderate heel. The lack of straps or buckles contributes to a clean and sophisticated look, making court shoes a staple in many wardrobes for both formal and business attire.

Fig 1.3.5

DERBY

Derby shoes are classic footwear known for their open-lacing system, where eyelets are sewn on top of the shoe's vamp. This design creates a more accommodating fit. Derby shoes usually feature a rounded toe and a sturdy sole, making them versatile for various occasions.

Fig 1.3.6

SANDALS

Sandals are open-toed footwear with straps or thongs that secure the sole to the foot. They come in various styles, from simple

flip-flops to more intricate designs with multiple straps. Sandals are known for their breathability and are typically worn in warm weather. Sandals may have flat soles or a slight heel, catering to different preferences and occasions.

Fig 1.3.7

The need for these basic styles arises from the variety of activities, environments, and dress codes people encounter in daily life. Each style is tailored to specific needs, whether it's providing support during physical activities, ensuring comfort for extended wear, or meeting the formalities of professional settings. The diversity of basic footwear styles allows individuals to express their personal style while ensuring they are appropriately equipped for different occasions and conditions.

Boots hold a significant importance in the world of footwear due to their versatility, functionality, and iconic style. Unlike other types of shoes, boots are designed to cover the foot and extend up the leg, providing an added layer of protection and support. This makes them well-suited for various weather conditions, offering insulation

and shielding against cold, rain, or rough terrains. The sturdy construction of boots makes them ideal for activities like hiking, working outdoors, or riding. Beyond their practicality, boots have become a fashion staple, with countless styles catering to diverse tastes. From sleek and polished ankle boots suitable for formal occasions to rugged and durable hiking boots for outdoor adventures, the versatility of boots sets them apart. Additionally, the timeless appeal of certain boot styles contributes to their enduring popularity, making them a wardrobe essential that seamlessly blends fashion with functionality.

1.4 OBJECTIVE:

Our main aim is to bring out a set of convertible shoes with unique designs that are different from what people usually expect on Therapeutic footwear. Implement the new convertible shoe designs with existing therapeutic shoes, ensuring a balanced blend that does not compromise the comfort and quality associated with conventional therapeutic footwear. Our project focus on well-being of therapeutic patients by providing versatile footwear options that allow individuals to customize their own style, empowering them to maintain a sense of normalcy throughout their therapeutic care journey.

CHAPTER-2

REVIEW OF LITERATURE

2.1 LITERATURE REVIEW - 1

Shoe and boot construction with attachable components by Sandra Garza.

The embodiment of the present invention generally relates to shoe and boot systems. More particularly the invention relates to a shoe or boot system and method for using the shoe or boot system that has one or more interchangeable components. The system includes a shoe that has utility alone. In addition, each of the components may be optionally reversible. The inside of the shoe or boot may also have an optional lining which may be removable. These components may also have hidden or exposed pockets for securing some articles.

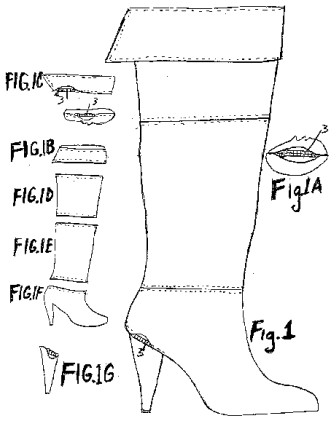


Fig 2.1.1

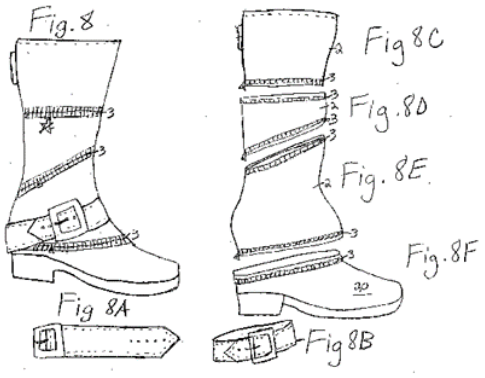


Fig 2.1.2

Hint: is a thigh high boot that consists of an ankle boot foundation with three upper components and one lower component which is connected with naps, buttons, Velcro® Hook and Loop, buckles, grommets, linear zippers, linear dual post zippers, curved zippers toggles clips, spring clips or swivel clips.

2.2 LITERATURE REVIEW – 2

Shoe with interchangeable strap system by David Berg, Thomas E. Mc Gann,

A shoe includes a sole member with an upper surface for receiving a user's foot and a lower surface for contacting a support surface. The sole member has a first sidewall and a second sidewall that are spaced apart and extend between the upper and lower surfaces. The sole member also has a slot defined therethrough, with the slot extending between the first and second sidewalls. A strap has a pair of opposed ends and a midportion there between. The midportion is designed to be received in and retained by the slot. The slot also has a closure member for joining the opposed ends. When the midportion of the strap is received in the slot and the closure member joins the opposed ends, the strap and the sole cooperate to form a shoe upper for receiving the foot.

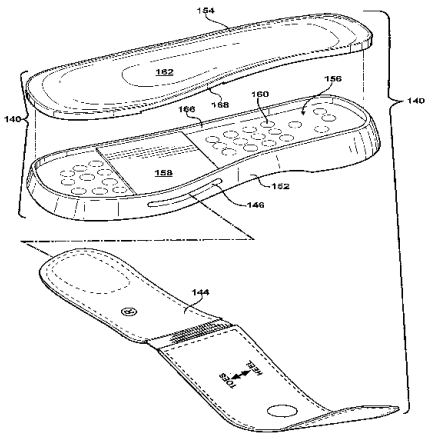


Fig 2.1.3

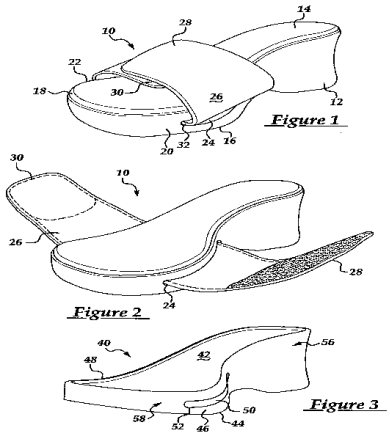


Fig 2.1.4

Hint: The sole member also has a slot defined through which the front strap is inserted and the strap has closure member for joining opposite ends.

2.3 LITERATURE REVIEW – 3

Shoe that can be converted to sandal or slipper by Junho yang

The present invention relates to a shoe that can be converted to a sandal or a slipper, in which a second upper portion that covers the top of the foot of a wearer of the shoe folds downwards, and the second upper, folded in a U-shape, is adhered to the upper surface of a heel insert and the inner surface of a first upper that maintains the outer appearance of the shoe, and by folding the heel of the shoe together with same, the folded second upper and heel perform the role of a heel insert of a shoe that has been converted to a sandal or a slipper.

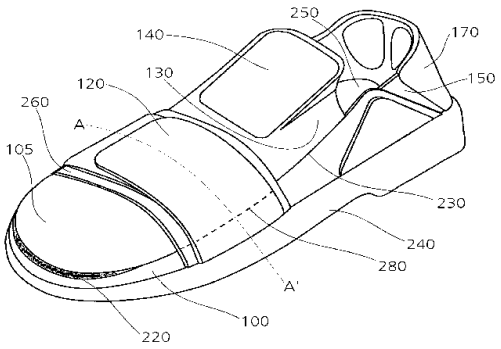


Fig 2.1.5

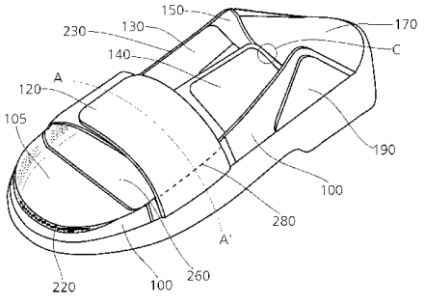


Fig 2.1.6

Hint: In shoes or sneakers, the upper completely covers the instep and wraps up to the heel of the foot, and the slipper has the shape that the upper covers only the instep and the heel of the foot is exposed to the outside here the shoes are converted to slippers, by folding the upper (toe and counter region) inwards.

2.4 LITERATURE REVIEW – 4

Interchangeable Shoe System by Benjamin James Kaiser

An interchangeable shoe system is provided that is comprised of a removable upper unit and a completed shoe unit that can be interconnected utilizing respective upper and lower the completed shoe unit is also equipped with a zipper on the top of the front half portion. The zipper surrounds the completed shoe unit, generally beginning from the middle of one side of the completed shoe unit, extending around the front end of the completed shoe unit (the toe section), and ending at the middle of the opposite side. The removable upper unit is equipped with the other half of the zipper and Velcro. The Velcro and zipper on the upper unit will connect with the Velcro and zipper on the completed shoe unit via their

respective connecting means.

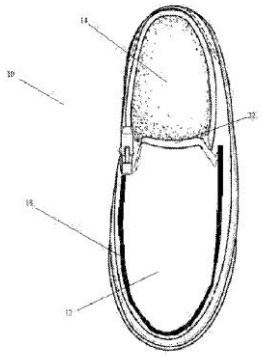


Fig 2.1.7

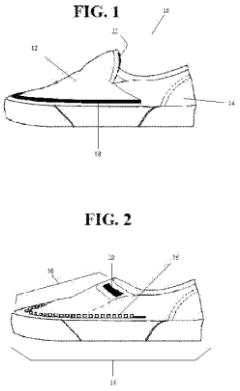


Fig 2.1.8

Hints: The upper unit and complete shoe unit are able to attach and detach from one another using zipper and Velcro.

2.5 LITERATURE REVIEW-5

VAVVA - CONVERTIBLE WOMEN'S WORK SHOES

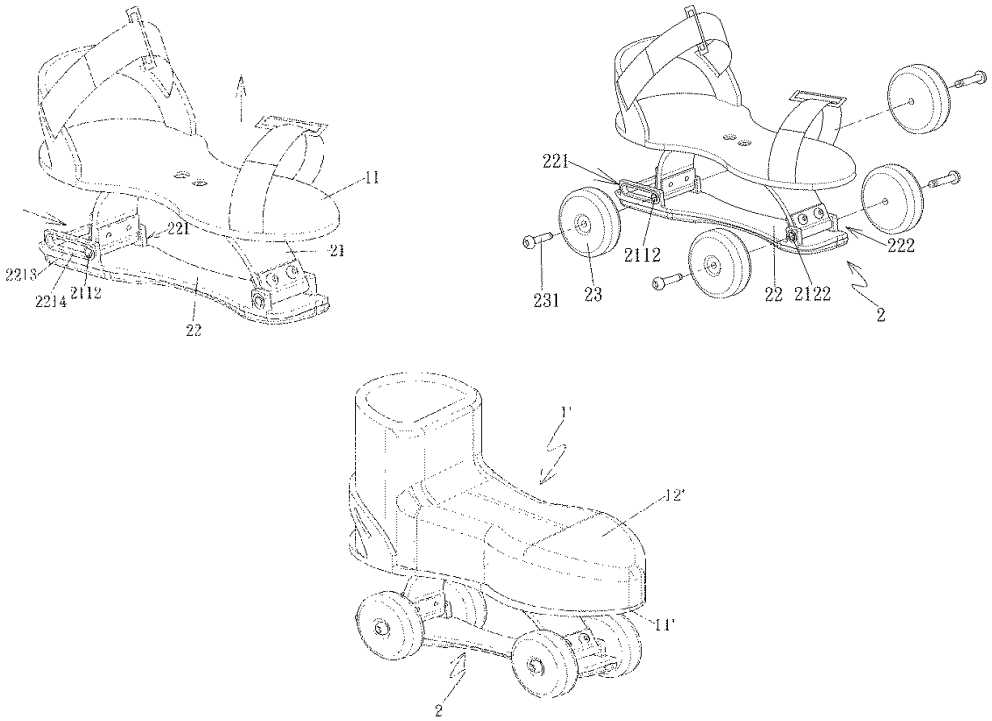
Designed to be more comfortable, VAVVA, allows working women to own both high heel shoes and flats in one pair of elegant work shoes. The main four features of this product are its easy convertible mechanism from low to high heels and vice versa, insole padding for extra comfort, safe heel structure, and elegant standard shoe design.

2.6 LITERATURE REVIEW-6

Multifunction shoes

A shoe includes a first part wore by wearers and a second part which includes a C-shaped resilient plate which is fixed to an underside of the first part by its top. A first pin and a second pin are respectively connected to the front end and the rear end of multifunction shoes the resilient plate. A base includes a front end which is pivotably

connected to the first pin on the resilient plate and two lugs extend from the top of the rear end of the base. Each lug has an elongate slot and the second pin is movably engaged with the two elongate slots of the two lugs. The resilient plate is moved up and down when the second pin is moved within the elongate slots of the base.



2.7 LITERATURE REVIEW-7

8. **A Method of Style Convertible Footwear Construction by Replaceable Upper**

Authors:

Md. Farhan Absar Tahsin

Subol Halder

Md. Imrul Kayes Limon

Muhammad Naimul Hasan

In this study, one pair of derby and another pair of oxford shoe with removable upper were designed and developed. In this construction, strips of Velcro and snap buttons were used along the feather edge of the shoe to attach the upper and bottom firmly. The replacement of the upper was possible through this construction.

2.8 LITERATURE REVIEW-8

strap changing system

The shoe strap changing system of the present invention consists of a base shoe, which includes an upper and a sole. The sole includes a slot, which has a height, a width extending from near the heel portion of the sole across the middle portion of the sole toward the toe portion of the sole, and a depth
extending from the medial side of the sole to the lateral side of the sole. The position and size of the slot enables various size straps to encircle the upper of the base shoe, thereby providing stability for the user's foot and versatility of the appearance of the base shoe. Since the slot accommodates various size straps, the base shoe may form the basis for a shoe strap changing system. A user can remove a first strap from the base shoe, and place a second strap through the

slot. The second strap may have the same or different characteristics of the first strap. Therefore, the shoe strap changing system allows a user to change the appearance and stability of the base shoe by altering characteristics such as size, shape, and color of the strap that encompasses at least a portion of the upper.

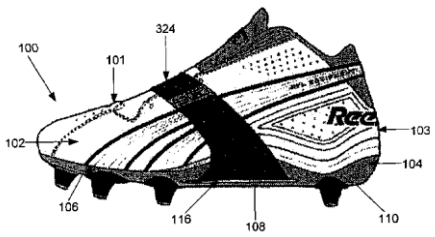


FIG. 3

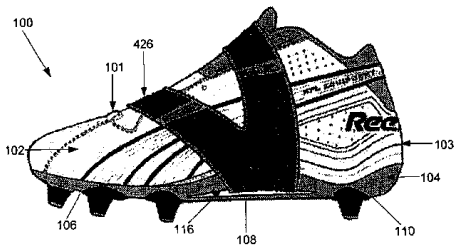


FIG. 4

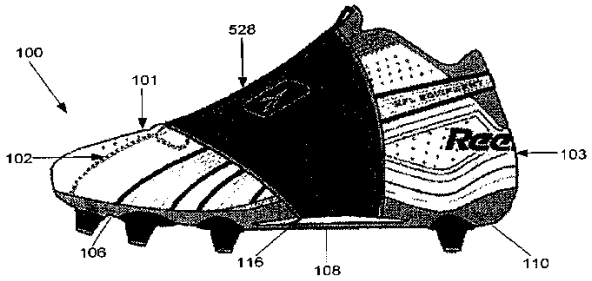


FIG. 5

2.9 LITERATURE REVIEW-9

Footwear having interchangeable decorative straps and strips

This invention relates in general to interchangeable decorative straps and strips for usage in combination with a footwear. The decorative straps and strips are secured to the exterior surface of the footwear by a loop and hook [VELCRO] fastener. This allows a user to wear a single pair of footwear with a variety of outfits by changing the overall physical appearance of the footwear with an assortment of

interchangeable decorative straps and strips.The assortment of interchangeable decorative straps and strips consists of trimming-type decorations, and is preferably selected from the group consisting of beads, bows, flowers, fringe, zippers and colored fabrics or ribbons. Each of the assorted straps or strips is designed to coordinate with, i.e., to be aesthetically pleasing with, a variety of outfits so that the footwear may be used in conjunction with a number of different outfits.

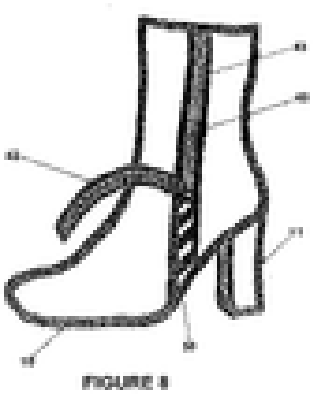
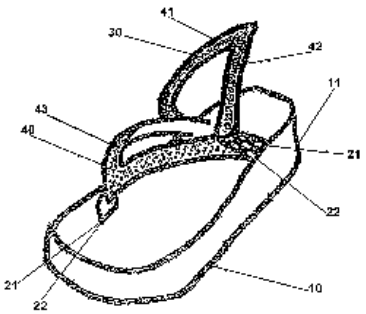
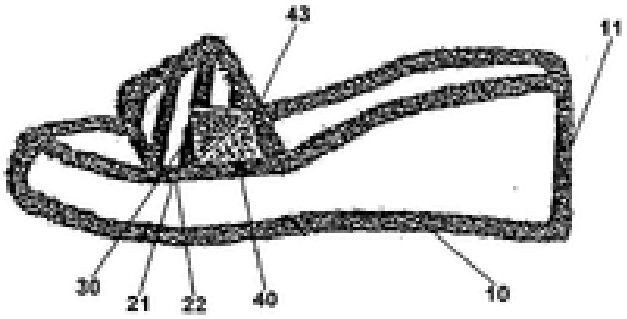


FIGURE 3





CHAPTER-3

MATERIALS AND METHODOLOGY

3.1 MATERIALS:

The material required to do this project are as follow

- ❖ Raw material
- ❖ Attachments

3.1.1 RAW MATERIAL:

The application of the convertible footwear is focused on extended coverage and adaptability to various environmental conditions. So we use hides for upper and skins for lining.

Other reinforcement materials

- Toe puff
- Heel grip
- Zipper
- Midsole cushioning (MCR)
- Outsole (EVA)

All the materials are taken from CSIR-CLRI

3.1.2 ATTACHMENTS:

Attachments in shoes refer to the various methods used to join different components of the shoe together during the manufacturing process.

- Screws
- Glue

- Zipper
- Velcro
- Snap buttons
- Staples
- Stitching
- Nails or rivets

We intend to utilize Zip System as connectors for our project.

3.2 METHODOLOGY:

Therapeutic shoes are normally shunned by most people because they look “unattractive”, this may have been true a decade ago, but the case is different today. Creation of shoes that transcend the boundaries of traditional footwear. Our aim is to craft a convertible shoes that can provide valuable support to therapeutic patients, addressing both their medical and lifestyle needs.

3.2.1 PROPERTIES OF UPPER LEATHER

- Structural strength
- Flexibility
- Comfort
- Abrasion resistant
- Breathability
- Shape Retention
- Grain Tightness
- Tensile Strength
- Low -temperature toughness(EVA)
- Good abrasion resistance(MCR)
- Good clarity and gloss(EVA)

- Good cushioning effect(MCR)
- Resistance to UV radiation(MCR)
- Good flexing& resilience property(MCR)
- Waterproof properties(EVA)

3.2.2 PROCESS FLOW

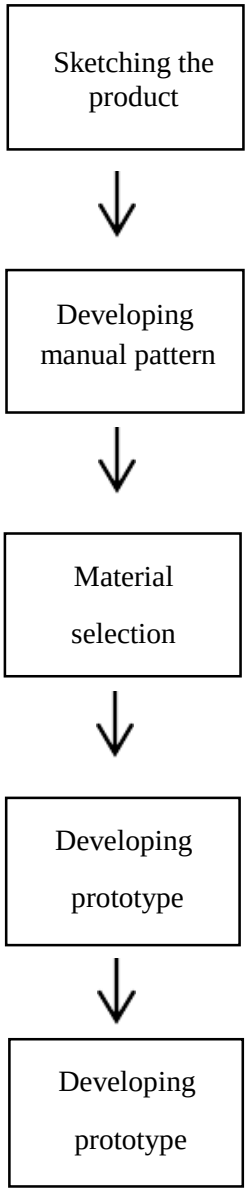


Fig. 3.1 Process Flow

3.2.3 PROCESS STRATEGY

Our project delves into the innovative development of a convertible feature in therapeutic footwear, aimed at seamlessly transitioning open footwear into closed footwear. With a primary focus on versatility, our design allows for the utilization of the same shoe as both a sandal and a regular shoe, catering to the dynamic needs of individuals with various foot conditions.Key to our innovation is the consistent sole structure, ensuring uniform support and comfort across both sandal and shoe configurations. The bottom sole remains unchanged, guaranteeing stability and functionality in all modes of wear.

Our unique construction approach involves cemented attachment of the sandal strap to the bottom sole, ensuring robustness and durability. In contrast, the upper component is seamlessly affixed using a zipper system, enabling effortless conversion between sandal and shoe modes.

At the heart of this design is the integration of a sophisticated zipper mechanism, facilitating swift transitions between open and closed configurations. The zipper tape, ingeniously connected to both the sandal and upper parts, ensures a secure and reliable closure, enhancing user convenience and comfort.

This project represents a significant advancement in therapeutic footwear, promising unparalleled adaptability and functionality for individuals seeking relief from foot ailments. By offering a convertible feature that seamlessly toggles between sandal and shoe

modes, our innovation aims to revolutionize the comfort and convenience of therapeutic footwear.

❖ Sketching & Illustrating the product

The sketching of footwear involves creating visual representations and detailed illustrations to conceptualize and plan the design of shoes.

Fig 3.2.1

❖ Developing manual pattern

“Orthopaedic last" is commonly used for Therapeutic footwear designing. An orthopedic last is a specialized mold used in the production of therapeutic footwear. It is uniquely designed to accommodate the specific contours and needs of individuals with foot conditions or orthopedic issues. By providing customized support and alignment, the orthopedic last ensures optimal comfort and functionality for the wearer.

The term "masking" in the realm of shoe design refers to the process of translating the 3D shape of the last into a 2D paper format. This

crucial step aids in the creation of patterns and templates used for cutting and assembling the various components of the footwear.

The mean form is established by capturing the in and out pattern of the last, followed by standard pattern making to determine the shoe style and incorporate convertible features in shoe design. This comprehensive process results in the final pattern for efficient shoe production.

- Material Selection

The preferred material for Orthopaedic footwear is leather, valued for its durability, flexibility, and breathability, with variations such as full-grain, suede, or patent leather offering diverse textures and finishes. Additionally, materials like EVA (ethylene-vinyl acetate), memory foam, or leather contribute to cushioning and support. The selection of materials hinges on factors like the boot's intended purpose (work, fashion, outdoor), desired aesthetics, comfort needs, and budget constraints. Key reinforcement components used in boots encompass the toe puff, heel counter, ankle support, and reinforced leather.

- Developing Prototype

In footwear manufacturing, developing a prototype involves creating a preliminary model of the shoe design . This process typically includes crafting a sample using chosen materials, allowing manufacturers to assess the design's feasibility, fit, comfort, and overall performance. Adjustments can be made based on the prototype evaluation, ensuring that the final product meets quality standards and customer expectations.

CHAPTER-4

IDEATION

4.1 MODEL 1

In Model 1, the main focus is on converting open footwear into closed footwear. It can be used as both a sandal and a regular shoe. The sole at the bottom remains the same for both the sandal and the shoe. The sandal strap is attached to the bottom sole using cemented construction whereas upper can be attached using zipper. We achieved this by incorporating a zipper system for the conversion process. One side of the zipper tape is connected to the sandal part, while the other side is attached to the upper part.

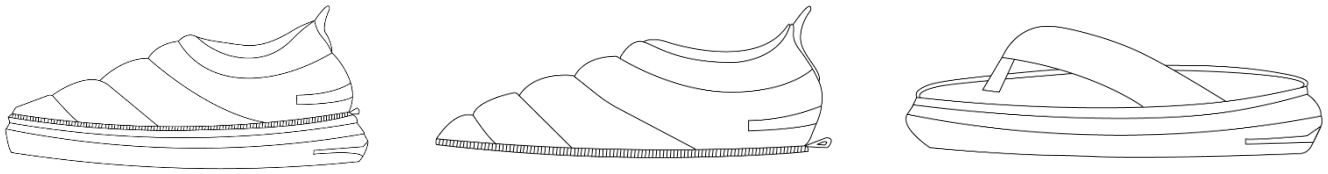


Fig 4.1.1

4.2 MODEL 2

The insole sandal incorporates two sole portions: the first designed to interface with the user's foot, and the second to interface with the ground surface and the bottom of the shoe's interior. To secure the

insole sandal to the wearer's foot when worn as a sandal, a strap is included. Notably, two pull tabs are featured—the first pull-tab portion extends straight across the entire length of the sole, from the end where the user's toes would fall to the end where the user's heel would rest. The second pull-tab portion serves as a handle with a grip loop, extending from the sole with a single end.

The insole sandal is specifically configured to fit within the interior of a shoe that has a split, and the strap includes a protruding portion that acts as a shoe tongue when worn. Additionally, a strap is attached between the pull tab and the tongue portion of the insole sandal.

We're thinking of creating an insole with a reference from a pop-up. The insole surface would have a circular indentation of about 25-30mm that can be pressed out by applying a slightly higher amount of pressure. According to the diabetic foot ulcer modification can be made in the insole sandal based on the location of their foot ulcer.

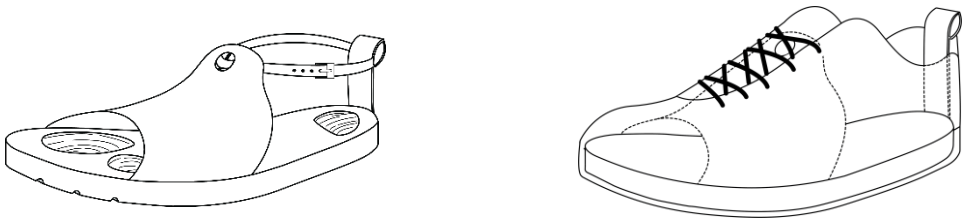


Fig 4.2.1

Converting the Oxford shoe style to a slip-on offers versatility, enabling a single pair to seamlessly transition between professional and casual occasions. This adaptability enhances practicality, allowing individuals to streamline their footwear options for different settings without sacrificing style or comfort. The slip-on design

facilitates convenience, making it a go-to choice for a range of activities and environments, thereby optimizing the utility of the footwear across diverse occasions.

4.3 MODEL 3

The convertible footwear comprises an outer sole and a sock insole. The outer sole, characterized by substantially constant thickness, serves the dual purpose of providing the necessary rigidity shoes and the comfort associated with sandals. This outer sole is defined by at least two material straps designed to extend across the forepart of the user's foot, facilitating use as sandal footwear or securing interchangeable shoes. The fastening mechanism for the outer sole includes options such as a buckle , velcro.

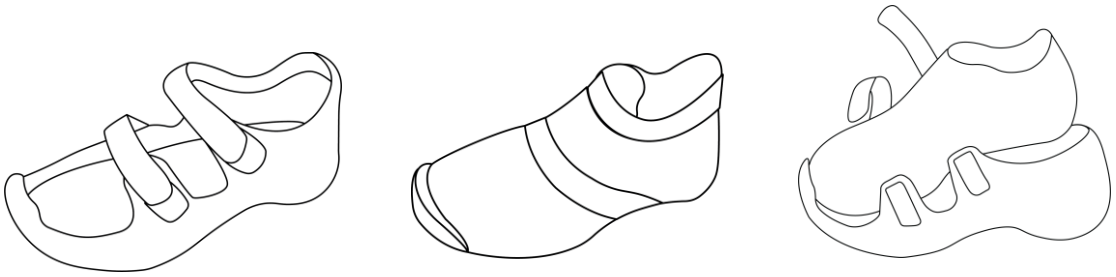


Fig 4.3.1

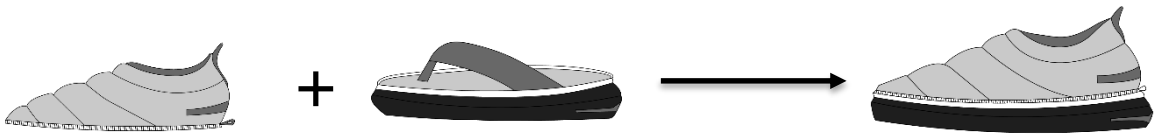
The sock insole element is composed of a sock crafted from materials like cotton or man-made fabrics, featuring a built-in insole or outer sole. The sock includes an elastic material encircling the arch of the foot, ensuring a snug fit and grip on the foot. This sock design incorporates a built-in insole to protect the user's foot from shocks, impacts, slips, and changes in temperature, particularly when worn independently. Additionally, the sock's built-in insole serves a

therapeutic purpose when used in conjunction with ill-fitted or improper shoes. The therapeutic effect of this insole therapy provides extra-soothing, cushioning to alleviate pain resulting from poorly fitted footwear.

CHAPTER-5

EXECUTION AND ASSESSMENT TEST

We developed Model 1 varieties with a primary focus on transforming open footwear into closed footwear, capable of functioning as both a sandal and a regular shoe. Utilizing a consistent sole for both configurations, we employed a cemented construction to attach the sandal strap to the bottom sole. Additionally, we integrated a zipper system to facilitate the conversion process; one side of the zipper tape is affixed to the sandal portion, while the other side is connected to the upper part. Its mechanism are listed below,



5.1 MATERIAL USED

- Upper - Cow upper
- Midsole - MCR
- Outsole - EVA
- Zipper - Plastic molded
- Cushion - Memory foam
- Toe puff
- Heel grip
- Thread - Nylon

5.2 PROCESS FOLLOWED

The following are the processes that we followed for developing the prototype.

- **Sketching & Illustrating the product** - The sketching of footwear involves creating visual representations and detailed illustrations to conceptualize and plan the design of shoes.
- **Selected Last** - Orthopedic Last
- **Masking** - This process in shoemaking where masking materials, such as tape or paper, are applied to specific areas of the shoe's last (a three-dimensional mold resembling the foot) to protect it from certain operations during the manufacturing process. This technique helps maintain the integrity and shape of the shoe while various components are assembled and attached.

- **Pattern Making** - "Pattern making in footwear" is the process of creating templates or patterns that serve as guides for cutting and assembling the various components of a shoe. These patterns are typically developed based on design specifications and measurements, and they outline the shapes and sizes of individual pieces such as the upper, lining, and sole. Pattern making is a critical step in footwear manufacturing as it ensures consistency and accuracy in the production of each shoe style.

- **Sole Development** – It refers to the process of manufacturing the bottom part of a shoe, known as the sole, using materials such as Ethylene-Vinyl Acetate (EVA) and Microcellular Rubber (MCR). During this process, the EVA and MCR materials are typically molded or formed into the desired shape and size for the sole of the shoe. After molding, the sole undergoes a smoothing process to refine its surface texture and appearance, ensuring it is comfortable and aesthetically pleasing for the wearer.

- **Developing Prototype -** In footwear manufacturing, developing a prototype involves creating a preliminary model of the shoe design . This process typically includes crafting a sample using chosen materials, allowing manufacturers to assess the design's feasibility, fit, comfort, and overall performance. Adjustments can be made

based on the prototype evaluation, ensuring that the final product meets quality standards and customer expectation.

5.2 PRODUCT ASSESSMENT TEST

The following tests have been performed on our prototype,

- Sole Bond Strength
- Eyelet Strength
- Zip Attachment Strength
- Sole Flexing (Both Whole Shoe and Sole)
- Cushioning Test(Energy Absorption Test)
- Gait Analysis Test

CONCLUSION

In conclusion, the project "Development of Convertible Feature in Therapeutic Shoe" has successfully addressed the need for versatility and adaptability in therapeutic footwear. Through innovative design and engineering, we have achieved a breakthrough in footwear technology by integrating a convertible feature that allows the shoe to transform from an open sandal to a closed shoe, providing users with enhanced comfort and functionality.

By incorporating a zipper system and utilizing consistent sole construction, we have ensured seamless transition between different configurations, accommodating diverse user preferences and therapeutic requirements. This convertible feature not only offers convenience but also promotes mobility and independence for individuals with foot conditions or special needs.

Throughout the development process, careful attention has been paid to quality, durability, and user experience, resulting in a product that meets the highest standards of performance and comfort. Our collaborative efforts have led to the creation of a therapeutic shoe that not only supports foot health but also adapts to the dynamic lifestyle of its users.

As we move forward, we envision further refinement and expansion of this innovative technology, with the ultimate goal of improving the quality of life for individuals with diverse foot care needs. The success of this project underscores the importance of innovation and collaboration in addressing challenges in the field of therapeutic footwear.

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