ATTACHING TWO BICYCLE ACCESSORIES SIMULTANEOUSLY: THE SOLUTION

This bachelor thesis was executed at a company which develops bicycle accessories such as bicycle bags, bicycle basket, dog baskets, trunk bags and rain clothing. Next to these product they also developed a clicking system which makes attaching and detaching bicycle accessories fast and easy. Users of this system can easily switch between, for instance, bicycle bags and a bicycle basket. The problem the company was facing is that it is not possible to attach both bicycle bags and a bicycle basket, trunk bag or a different accessory. The aim of this bachelor assignment was to further develop their current system to make it suitable for the attachment of two bicycle accessories simultaneously.

To fulfil the product aim, the different phases of the design process have been completed. The process started with a research phase. Within this phase the working principle of the company's current clicking mechanism as well as clicking mechanisms of competitors were looked into. Furthermore, the most important stakeholders to keep in mind during the design process have been taken into account. Another important aspect is the target group for whom the product will be designed. These different aspects of the research phase where summarized within the product requirements. The most important ones of these requirements are that the system should be compatible with the products for the company's current clicking system, that the bicycle accessories should be attachable separately (for example only bicycle bags or only a bicycle basket) and most importantly the product under design should allow the attachment of two bicycle accessories simultaneously.

After the research phase, the ideation was started. To have a guideline during this phase, an ideation tree was created. Within this tree, the different design directions where visualized as branches of the tree. For every feasible design direction, ideation sketches were created. By means of diverging and converging, ideas were created and narrowed down to a final concept. During converging, the feasibility, demand and usability of a specific design direction were the most important criteria in the decision making process. At the end, this resulted in a final concept which was made into a fast prototype to get an idea of the looks and working of the final concept.

The final phase of this design process is the detailing and testing phase. Within this phase the insights received from testing the fast prototype were processed into the product design. Details were added to the product to make it more user-friendly, enhance the performance and to make it visually fit within the current clicking mechanism product line of the company. Within this phase the strength of and ability to mould the product have also been looked at. Changes were implemented to improve the strength and producibility of the product. Furthermore, a second prototype was developed. This prototype was tested and final changes were implemented into the final product.

The end product of this bachelor assignment is an in-between platform which allows the attachment of two bicycle accessories simultaneously. One could think of the attachment of bicycle bags in combination with a bicycle basket or dog basket or trunk bag and so on. This platform gives the opportunity to easily switch between bicycle accessories. And next to the attachment of two bicycle accessories simultaneously, it is also possible to attach only one bicycle accessory. Altogether, this will enhance the cycling experience and joy of the user.

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