

Pan'an - Climbing Intelligent Goggles and APP Design

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Abstract: This project investigates and analyzes the attention and function design of the intelligent goggles market by consulting reference documents and other ways, and classifies the characteristics of the outdoor goggles market user groups, as well as the user experience and existing problems when using the product. It is found that the existing intelligent goggles have incomplete functions, poor user experience and no connection with mobile apps. On this basis, we have improved and redesigned the traditional intelligent goggles.

Keywords: Climbing intelligent goggles

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1. Project introduction

In recent years, as the country attaches great importance to the development of sports, it has issued a series of favorable policies, which has stimulated the attention of the sportsmen to the safety protection awareness, and promoted the rapid development of the outdoor goggles industry. It has the characteristics of safety and use, and is mainly used in outdoor sports fields such as skiing, swimming, cycling, etc. Outdoor intelligent goggles are auxiliary equipment used to protect the eyes of the sportsman. In some rapid movements, the air resistance is large or because of the dust in the air, the fragile eyes are vulnerable to injury. They can isolate the sportsman's eyes from the outside to protect the eyes and prevent the eyes from being injured by strong light and sand. It is suitable for outdoor sports such as motorcycle, skiing, racing bicycle, etc., or widely used in deserts and plateaus with relatively bad environment. However, due to the incomplete functions of intelligent goggles in the market, it has brought a lot of inconvenience to users and left many users without a good experience.

In order to solve the problem that the traditional goggles can not solve the existing problems of users in an all-round way, it is necessary to increase the functional design of the traditional goggles, meet the needs of users of different ages, and improve or eliminate the traditional goggles existing in the existing market. The core function of this project is mainly infrared. After investigation, it is found that infrared has not been applied to the function of outdoor intelligent goggles, This project mainly improves and upgrades the functions of traditional goggles. How to bring users a more intelligent, convenient and effective experience is an important part of our design concept.

2. Research content

In order to determine the direction of safety, practicality and comfort design of intelligent goggles, as well as the direction of innovation and development, the attention and function design of intelligent goggles are first investigated and analyzed by consulting references and other ways, and the research and classification are carried out based on the characteristics of the user group in the intelligent goggles market and the functions required by users in the intelligent goggles, There must be a problem that there is no such product for intelligent goggles in outdoor sports. On this basis, based on user needs, we will innovate the intelligent goggles bracket to create an intelligent goggles suitable for outdoor sports.

This product is mainly a new type of intelligent goggles for outdoor sports. Through user research, we learned that users have a strong demand for the safety, comfort and convenience of such products. Therefore, our team focused on solving users' needs when

designing the intelligent goggles. This product has the functions of environmental detection, intelligent eye protection, real-time transmission, intelligent alarm, etc. The goggles rely on infrared detection technology to survey the surrounding environment in real time, and record it in real time through wireless image transmission, so that users can avoid risks in advance during climbing.

3. Research status and development trend at home and abroad

China's development trends, first of all, the Internet helps enterprises develop the second and third tier markets. The sales of traditional manufacturing enterprises are mainly carried out by means of their sales network. The cost and development difficulty of the layout are relatively high, and there will be certain restrictions. The Internet is not restricted, and marketing activities can be carried out as long as there is a network. At present, the network construction in the third-tier and fourth-tier cities is gradually accelerated, and the network coverage is gradually improved, which provides a good foundation for sports goggles enterprises to explore the market in the third-tier and fourth-tier cities. Secondly, the market share of sports safety glasses chain enterprises has been increasing. With the increase of consumer demand, the continuous rise of operating costs, and the pressure of e-commerce impact, the market share of small and medium-sized sports goggles retailers will continue to shrink. Large sports goggles retail chain enterprises with the advantages of scale, management, brand, and service will gain greater development opportunities, and the sports goggles retail market will develop in the direction of standardization and collectivization.

From the perspective of market competition pattern, there are not many domestic enterprises with high-end design and production capacity of sports goggles, most of which are selling related foreign brands and products. At present, China's sports goggles products are mainly foreign brands, such as TIFOSI, Honeywell, OAKLEY, etc. Their sports goggles products are gradually recognized by the market with high-end, branding and safety. China's domestic sports goggles products are represented by brands such as Pathfinder, Hi-card Sports and Tuobao. With the continuous improvement of domestic market demand and the increasing consumer recognition, the domestic sports goggles brands also attach great importance to the role of safety and functionality, and their market competitiveness will gradually improve.

Compared with China, the sports glasses industry in foreign countries is more developed, with TIFOSI, Honeywell, OAKLEY and other brands representing the first tier of competitive enterprises. Their sports protective glasses products are gradually recognized by the market with high-end, branding, and safety, and have been highly praised at home and abroad, but the price is high, and the sales target is relatively small. But it pays more attention to safety and comfort.

North American consumers show a high preference for high-end and fashionable brand eyeglass frames and sunglasses with anti-ultraviolet, anti-glare and anti-scratch coating lenses. Europe's high contribution to the global sales of glasses lies in its high consumption of high-end products and high brand awareness of consumers. The strong presence of industry leading enterprises such as Safilo and Luxottica has also brought good prospects for the European glasses market. The growth of the Asia-Pacific region is led by emerging economies such as China and India. These countries have high population density, and the penetration rate of glasses is also increasing. The development trends of foreign countries, first of all, are more developed than domestic ones due to their early research, the vast internet and offline market, and the official support, which has a great impact. Secondly, affected by the major sports games, people's demand for goggles has increased, making the goggles industry more professional, civilian and more opportunities for development.

4. Innovation points and project characteristics

4.1 Innovation points

The intelligent goggles are extremely ergonomic in design and appearance, and the three-point balance design is added to make the appearance more beautiful. Technically, the intelligent goggles combine lens, frame, camera, infrared detection technology and alarm system to ensure user safety while ensuring user comfort.

4.2 Project characteristics

On the one hand, outdoor smart goggles solve the disadvantages and problems of traditional goggles, and on the other hand, they are connected with mobile apps, which meet the needs of current users. Make it more effective, intelligent and convenient user experience. The main functions include survey and detection function, induction conduction function, data storage function, intelligent alarm function, intelligent eye protection function, infrared terrain survey and intelligent navigation function.

5. Intelligent goggles and App design

5.1 Functional design

This product is a perfect combination of sports camera and sports glasses, which can realize the shooting and recording of outdoor

sports video from the first perspective. The intelligent goggles have the main functions of intelligent terrain survey, environment survey, temperature measurement, body data detection and automatic alarm. In addition to these functions, additional functions can also be expanded, such as video recording function, reducing ultraviolet radiation, intelligent navigation and other basic auxiliary functions. The intelligent goggles and mobile phone APP cooperate with each other, so that users can understand the product more quickly and conveniently.

This intelligent goggles is a high-tech intelligent product based on mobile internet technology. It supports the recording and shooting of 1080P 30fps motion video with 120 ° wide angle. The core functions are concentrated above the goggles lens, and there is a high-definition camera. The intelligent goggles use wireless image transmission technology to transmit images and videos in real time, use CDMA and GPRS public mobile networks to transmit images, use MPEG-4 compression mode, and use MPEG-4 CIF format to compress images, which can reach a rate of about 2 frames per second; If the image is adjusted to QCIF format, it can reach more than 10 frames per second.

5.2 Material selection

The frame of the glasses is made of TR-90 high-strength memory material, and the surface is double-layer semi-gloss matte oil spray with ceramic coating, which makes the product present exquisite black metal texture, and the overall appearance design is very sporty.

The lens is a one-piece hyperboloid wind tunnel anti-fog lens, the front is dazzling in the light, and the PC environment-friendly material can withstand higher intensity impact; Combined with the world's leading high-definition optical technology, it brings users a clearer vision with great technological difficulties. At the same time, it has ultra-strong anti-ultraviolet function, which can fully protect users' eyes in outdoor sports.

The soft rubber nose holder of this intelligent sports glasses is wide and comfortable, and adds a three-point balance design, which can perfectly fit the nose bridge without any pressure; In addition, ergonomic design and lightweight design of only 60g ensure the comfort of wearing for a long time.

6. Conclusion

The goggles rely on infrared detection technology to survey the surrounding environment in real time, so that users can avoid risks in advance during climbing; Automatic alarm technology is also a highlight of this goggles. This goggles will analyze data in real time according to the user's physical condition and conduct corresponding alarm processing. The function and material design of intelligent goggles can bring users a safer and more comfortable feeling.

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