

Application of leather materials in the design of Frame Spectacles

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Abstract:

Research on application of leather materials in the design of frame spectacles. By introducing the application of leather materials in different development stages of frame spectacles, The analysis of the performance advantage of leather materials in the design of frame spectacles and the aesthetic characteristics of leather materials in the design of frame spectacles. To sum up the present form of leather materials in the design of frame spectacles, and discuss the development trend of leather materials in the design of frame spectacles. The purpose of this study is to find the form and method of the design and application of leather materials suitable for the development of the present frame spectacles design from the point of view of product design material technology.

Keywords:

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Application

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1. Introduction

Leather material has a long history in the manufacture of frame spectacles. As early as the beginning of the frame spectacles have begun to use the leather material in the manufacture of frame spectacles. Although the early leather outmoded manufacturing process and production is low, but there is no shortage of leather figure in the frame spectacles. The application of leather material in spectacles frame has been widely used, in the middle of development of frame spectacles. Due to the special function and structure of the frame spectacles, as well as the use of the habit of wearing, it is in close contact with the human body and the use of time is higher than any other daily necessities^[1]. The use of leather, which is a natural life material in frame spectacles, has unique performance advantages that other materials do not have. At the same time. Because leather has unique aesthetic emotion. It makes the public consumer have a special liking for leather products. Research on the application of leather material in frame spectacles design. The purpose is to study and analyze the performance advantages and aesthetic characteristics of leather materials in frame spectacles design. Summarize the application form of leather material in frame spectacles design in the market. The development trend of design and application of leather materials in frame spectacles is discussed. Analysis of frame spectacles from the point of view of product design and material technology.

2. Application of leather materials in the development of frame spectacles

Leather material is an ancient product making

material. It has the advantages of warmth retention, ventilation and simple processing. In the early stages of human development, the skins of wild animals were used to make all kinds of essential things in life. The earliest leather material processing technology is also very simple, is directly through the animal skin cutting and sewing processing, is the most primitive leather products. In the course of the development of spectacle, as early as the 14th-15th century, the early production of spectacle, there are leather materials used to make the history of spectacle (Figure 1)^[2]. By 16th Century, leather cords had been used to hang frames over their ears (Figure 2). Thus, the use of leather materials in frame spectacle is a long history. It was not until 18th Century that frames of leather and other materials were made together (Figure 3). In 19th Century, due to the emergence of a variety of new materials, especially the emergence of Lu Lu material and the emergence of ethylene synthetic materials, gradually replaced the leather material and horn made of spectacle frames. By 20th Century, with the continuous improvement of leather processing technology, leather was designed and made into different colors, different shapes, texture difference obvious material^[3]. In the middle and late 20th Century, people began to pursue fashion, especially the popularity of the retro style, which the leather materials made of spectacle again accepted by wearers, and gradually began to pursue. Especially the pursuit of fashionable sunglasses and more decorative luxury frame spectacle (Figure 4), re-using the leather material as an important decorative material for

spectacle, it is widely used in the design of spectacle frames.



Fig.1 German hard leather frame spectacles in late 15th Century



Fig.2 Figure images of J.Rouyer in 1580 with a string of leather spectacles



Fig.3 In 18th Century the British leather box spring steel rivet leather hoop spectacles



Fig.4 Ray-Ban leather decorative Sunglasses

3. The advantages of leather materials in the design of frame spectacles

Leather, as a unique biological material, has many advantages that other materials do not have in the design of frame spectacle. Among them, the three performance advantages of skin affinity, slow resilience and porosity are the most prominent material performance advantages^[4]. First of all, leather is made from animal skin and is a biological product. As the body for a long time in contact with the product, if the leather processing does not add any other chemical agents, leather

products and human skin can have intimate contact, allergies and other adverse reactions to people not. Therefore, the skin affinity of leather is unmatched by other materials. Secondly, slow resilience is also the exclusive characteristic of leather materials. The slow resilience of leather reflects that the rebound effect does not rapidly affect the leather itself as it stretches to a certain length, but slowly recovers its original state in a specific manner. This slow rebound allows leather products to use body fitted features that allow wearers to wear a lower sense of pressure and ease of wear when used. Therefore, with the advantages of leather materials' slow resilience, we can design frame spectacle with minimal pressure on human body. It is not difficult to imagine that in the early 17th Century frames were made of leather material, which was bundled with the head and edge of the spectacle (Figure 5). In the framework of the steam punk style spectacle, use of leather materials too (Figure 6). Third, the biological nature of the leather makes its surface contain a large number of holes, and this porous structure makes leather with good breathability, moisture absorption and moisture removal. In the natural state, completely dry leather still contains a certain amount of water, leather spectacle will not appear too dry to worn. At the same time, the leather wet exhaust performance is also excellent, when the amount of water contained in a considerable number of leather, the surface is still dry, this to plump the wearer to provide good wear experience. This valuable moisture absorption and moisture removal makes leather frames wear comfortable and sanitary. The goggles used in the early days of the pilots are also heavily made of leather (Figure 7).

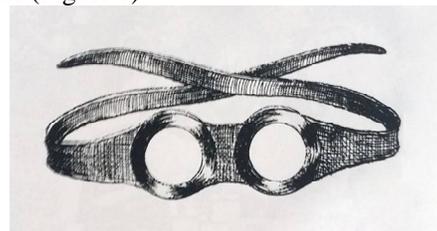


Fig.5 Germany leather frame spectacles in 1600



Fig.6 Steam punk style leather frame spectacles



Fig.7 Leather spectacles used by pilots

4. Aesthetic characteristics of leather materials in the design of frame spectacles

As an optical instrument for correcting vision and the necessary decorative articles in most people's life, leather frame spectacle have unique aesthetic characteristics^[5]. Because of the biological properties of leather, leather surface has unique texture effect, and these texture effects have unique natural charm. Especially the snake, crocodile skin texture differences, texture prominent leather, with unique aesthetic personality. Not only can give people a unique fashion aesthetic feeling into the leather spectacle design, can also enable consumers to find their own personal emotional sustenance, meet the unique style positioning frame spectacle products, the aesthetic features of such differences provide a broad space for spectacle designer.

First of all, the emotional nature of leather spectacle, people on the choice of frame spectacle, the first factor is based on personal preferences. The wearing of frame spectacle is also an expression of personal emotion, and more frame spectacle consumers choose different types of frame spectacle from the emotional needs. The application of leather materials to frame spectacle not only enhances the individuality and artistry of spectacle, but also introduces the special emotion and culture of leather to the frame spectacle. Leather framed spectacle are more intimate and add leather elements to the design of framed spectacle, which can make some people who love leather get emotional satisfaction^[6].

Leather goods can also reflect fashion. Fashion is a kind of popular, is a specific period of time the public preferences on behalf of the things. The use of leather materials in the fashion industry has a long history, mainly due to the earlier European aristocracy's love of leather products. Stylish frame spectacle design. It's use of leather unique texture and novel details of decorative design^[7]. In particular, the popularity of the retro style makes the leather frame spectacle popular in the fashion industry, becoming the darling of fashion.

Differences in leather types can be used to design framed spectacle of different styles. Casual style leather frame spectacle like to use cowhide and

sheepskin. Traditional leather, such as cowhide and sheepskin, reflects a rugged and atmospheric style, symbolizing freedom and unfettered life. The pig and horse leather delicate leather can give people a warm, romantic style, symbolizing equality and joyful life. Exaggerated personality spectacle the pursuit of visual stimulation with snake skin and skin leather crocodile rare, they are noble and mysterious symbol. The color of leather can also reflect the difference of design style, cool color leather gives a quiet, melancholy feeling, warm color leather gives people a peaceful, happy feeling. Different kinds of leather can be combined with frame spectacle to design frame spectacle suitable for different wearing styles.

5. Application form of leather materials in the design of frame spectacles

Because of the special structure of frame spectacle, and the leather material is mostly thin layer material, the design of leather in frame spectacle is mainly designed by three methods, such as gluing, inlaying and splicing. Therefore, in the market, the leather frame spectacle are mainly made up of three forms: pasting, inlaying and pressing^[8]. A leather frame spectacle are designed by combining leather materials with spectacle frames.

The sticking method of leather frame spectacle mainly chooses the corresponding leather material, and uses the combination agent to stick it on the outer surface of the spectacle frame, so as to realize the combination of the leather and the spectacle frame. Sticking method is the most simple and most convenient design and manufacture method of leather material in frame spectacle design. This method is versatile and suitable for spectacle frames of various materials. It's suitable for various types of leather materials, and has the advantages of no area limitation, simple method and low cost. But using the sticking method of leather spectacle, due to the use of combined agent, and combined with chemical agent itself have some damage to the leather, and can easily form glue marks on the surface of spectacle, glasses and beautiful, long time wearing leather easily lead to fall off (Figure 8). The Undustrial, It's design of the metal frame spectacle with pink leather adhered the leather material to the surface of the frame and the mirror leg by sticking method, forming the effect of leather covering the spectacle frame surface.

Compared with the sticking method, the design of the leather spectacle inlaying method can not only improve the firmness of the leather on the frame surface of the spectacle, but also can not influence the appearance of the frame spectacle. Inlay

method is mainly in the leather material added to the framework of the spectacle surface, with fine engraving machine, milling out the design groove, and then leather material is inserted in the frame spectacle surface groove. It can also be covered with a layer of transparent glue on the surface of the inlaid leather frame, so that the leather can be completely enclosed on the surface of the spectacle frame. The frame spectacle with the inlay method are better in overall and aesthetic than the frame spectacle with sticking method. Moreover, the leather on the spectacles frame is not easy to fall off, and is beneficial for long-term wear and preservation of spectacles. However, the inlaying process is complex and the cost is high. In order to ensure the integrity of the leather material, the depth of the groove needs to be strictly controlled. Otherwise, the inlaid leather will deform and affect the overall effect of the frame spectacle. At the same time, the inlay method also has a high demand for the shape, size and area of the leather patterns. Because leather material is relatively soft, if the inlay area is narrow or the design pattern is too complex, it will affect the final inlay effect of leather. (Figure 9) Fashion eyewear brand from Spain. LOEWE. The leather material is embedded in the metal groove of the spectacle frame by the inlaying method. Although only a simple rectangular leather pattern, but the combination of the metal frame and metal engraving LOEWE logo, the LOEWE logo and leather materials together, leather and metal materials reflect the collocation of fashion.

Different from the sticking method and the inlaying method, the pressing method is more advanced in the design of frame spectacle. Especially designed for spectacle frame and spectacle legs, you can use the spell machine components and leather spectacle direct heating and pressing, the leather pattern, color, pattern can be revealed through the spectacle, spectacle enhance beauty. By pressing, the integrity and beauty of frame spectacle are better than the two methods mentioned earlier. Because the pressing method is to realize the whole suppression through the hot melt between the leather and the spectacle skeleton, the hot difference of the material should be considered. The common metal frames of spectacle can not be hot pressed, which is also the limitation of pressing method. Pressing method has no specific restrictions on the shape and size of leather designs, but the pressing method is extremely difficult and costly. If the technology does not reach the standard, the reject rate is much higher than the first two methods of processing leather frame spectacle. (Figure 10). Design of

SLR 2014 optical frame spectacle. The leather material is completely suppressed on the spectacle frame and the surface of the mirror leg, allowing the leather to form a perfect package on the surface of the spectacle frame.



Fig.8 Pink leather and metal frame spectacles by Undustrial\



Fig.9 Spain's fashion glasses brand LOEWE Sunglasses



Fig.10 SLR Optical spectacles 2014

6. Development trend of leather materials in the design of frame spectacles

Although the leather material used in spectacle has a considerable history, but now in the spectacle market, leather spectacle design and development is still in a primary stage, only a small part of the spectacle used in the design and manufacture of leather material. But leather's unique function superiority and the special esthetic emotion, causes the leather material to apply in the life each kind of product widely. Frame spectacle are simple optical devices for correcting vision and protecting eyes^[9]. At the same time, it is an important decoration for fashion people. It is worn almost daily by users. It is more intimate and more expensive to wear than any other daily necessities. Therefore, the design and development of leather frame spectacle have special practical significance. Combined with the development of frame spectacle, leather is likely to be an important choice of frame spectacle material. The future of leather frame spectacle in the manufacturing technology and design techniques, there is still much room for development. First of all, explore

the combination of materials and try a mixture of materials and leather^[10]. Through the contrast between the materials to reflect the personality and aesthetics of frame spectacle. Secondly, in the design form of the spectacle frame, soft leather material can be used to replace other common hard spectacle frame, soft leather material applied directly with the spectacle frame, spectacle and hard to break through the traditional mode of appearance, innovative design. Third, in the leather material processing innovation, the manufacture of a certain degree of hardness of the leather material, and it is combined with frame spectacle, to produce a skeleton without pure leather spectacle frame.

The innovative design of the above aspects of the exploration can better play the advantages of leather, leather materials and spectacle combination design can play a better performance of leather leather performance advantages, unique aesthetic emotion, spectacle framework by the majority of new leather consumer preferences.

7. Conclusion

The use of leather materials in the design of frame spectacle can maximize the performance advantages and aesthetic characteristics of leather materials. Through the application of leather material in spectacle in different periods in the analysis in the framework of spectacle design aesthetic characteristics in the performance advantages and leather materials, leather materials in spectacle design, summed up on the market now leather materials in spectacle design in the form, to explore the development trend of leather materials in the design of spectacle frame. It is hoped that through the study, the frame spectacle will be able to realize the perfect combination of function and aesthetics through the characteristics of leather materials. To create a better performance of leather material performance advantages, unique leather aesthetic feelings, and the majority of consumers enjoy the new leather frame spectacle. Take this as a warning, provide a theoretical guidance based on the leather material used in

spectacle design of materials and technology point of view, let the material can be used in various leather spectacle design, bring designer spectacle based on a leather material on the application of new thinking, so as to broaden the choice of spectacle design materials.

8. References

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