

Analysis on Patent Pattern of Roliball Based on Innojoy Patent Database

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How to cite this paper: Chen, R. Y. (2023). Analysis on Patent Pattern of Roliball Based on Innojoy Patent Database. *Open Journal of Social Sciences*, 11, 496-509. <https://doi.org/10.4236/jss.2023.1112034>

Received: November 26, 2023

Accepted: December 23, 2023

Published: December 26, 2023

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Abstract

Roliball is an emerging sports event with a wide mass base in China. This study retrieved 202 related patents based on the innojoy patent database for more than 30 years of roliball patents worldwide. Through visual charts, the roliball patents were analyzed from the perspectives of patent layout analysis, innovation institutions and patent value analysis, patent quality and transfer analysis. The analysis shows that China is still the only source country for the invention patents of this emerging sports event, and its internal source has obvious regional characteristics and technical theme characteristics; the innovation and research and development of roliball is going through a transition stage from the explosive period to the adjustment period, and new technological innovations are needed to achieve breakthroughs; the relevant patent value of roliball is different, and the overall patent value needs to be improved. It is suggested that relevant interest groups should strengthen international cooperation and exchanges, encourage technological innovation and market development, improve inventors' patent protection awareness and application skills, and strengthen policy support and resource investment to achieve further development and innovation of roliball. Let roliball make greater contributions to the enrichment of human social life.

Keywords

Roliball, Sports Equipment, Technological Innovation, Patent Data, Development Strategies

1. Introduction

Roliball, also known as tai chi Roliball, is a tai chi ball game invented in Shanxi, China in the early 1990s (Wang & Yu, 2014). As early as 2013, the number of people around the world who regularly participate in roliball exercise and train-

ing has exceeded 20 million, and is increasing by one million people every year (Zhang et al., 2015). As a sport suitable for all ages, at the beginning of its development, the main body of rolisball was a highly antagonistic sport like badminton played on both sides of the net, so the audience of rolisball is actually young and middle-aged people and teenagers. However, with the extensive development of routine events in recent years, and the audience of rolisball is mainly middle-aged and elderly people, and mostly women. Now rolisball is a key development project of the National Senior Sports Association, which has been widely carried out in various senior sports associations, senior universities and other organizations, and the relevant training and event system is improving day by day. Today, rolisball has not only become a more popular mass sports project in China, become the official competition of the National Games, but also go abroad, in Japan, South Korea, Russia, Ukraine, Germany and many other countries (Chen & Wang, 2018). With the deepening of the aging of the global population and the continuous development of urbanization, rolisball, as a few emerging ball sports projects with fewer site requirements, high activity safety factors and good health care effect, has broad development prospects in the domestic and foreign markets, and can become an important force to promote national fitness and national sports power construction. In view of the actual needs of its own development, its related research is more prominent and important.

At present, although rolisball has gained a certain popularity and development at home and abroad, there is still a certain gap between its overall development level and the development of large-scale ball games such as the Olympic Games, Asian Games and World Games, and there are still many problems that need in-depth research and discussion in terms of technological innovation and commercialization. As one of the largest information sources in the world, patent information is the cornerstone of the identification of scientific achievements. Patent information can provide the track of invention and creation, reveal the trend of technology development, and show the competitive situation. It can also objectively reflect the overall development trend of a certain field (Guo & Xiao, 2008), and is an important window to understand the technology, market and competition situation. Therefore, this study searched the global rolisball patent data in more than 30 years, further analyzed the development trend of rolisball patents, hot areas of technology research and development, patent value and other content, and more comprehensively understood the development status and future prospects of rolisball sports industry. In order to provide reference for the development layout of rolisball industry, technological innovation, market development and relevant policy formulation (Yan et al., 2021).

2. Data Sources and Analysis Methods

2.1. Data Sources

The innojoy patent database covers more than 150 million patent data in 105 countries and regions around the world, including patent abstracts, specifications, legal status, family patents and citations, etc., to provide users with com-

prehensive patent data support. This research is based on the research methods of Yan et al. (2021), Qiu et al. (2017) and other scholars, and based on innojoy patent database, the world's published roliball patents are searched and analyzed.

2.2. Patent Search Methods

In view of the fact that different names existed at home and abroad in the history of the development of Roliball, the relevant keywords were obtained through literature verification and verification with Mr. Bai Rong, the founder of Roliball. The search time range is from January 1991 to September 2023, the search scope is global, and the specific search method is "TI, ABST, CLM+ = (太极娱乐球 或 多功能柔性保健球拍 或 柔力球 或 Roliball 或 Rouliqiu 或 Bailong Ball 或 ロウリーボール)".

2.3. Data Acquisition, Processing and Analysis Methods

Based on the above retrieval methods, a total of 202 pieces of relevant patent information were actually collected on September 20, 2023, and 194 pieces of patent retrieval information were actually obtained after the interference factors and the number of family patents were eliminated by IPC classification number screening, consolidation, and de-duplication. Refining the search results, it is found that only China has 194 sample data. The information is classified by type, including 19 invention patent applications, 115 utility model patents and 60 appearance patents. In addition, in terms of ownership, there are 65 entitled patents, 125 unentitled patents, and 4 pending patents. We classified and archived these original analysis data, and conducted in-depth analysis and visual expression of these information based on Excel and other software to evaluate information such as patent innovation scale, technical innovation quality and efficiency. Finally, we compare and evaluate the data, and discuss the relationship between the data, so as to make a factual judgment and inference about the patent content in this field.

3. Roliball Patent Layout Analysis

3.1. Patent Application Trends

The comprehensive development process of roliball can be reflected in the annual roliball patent applications. As the original invention country of roliball sport, roliball theme invention patents are still all concentrated in China. According to **Figure 1** obtained after the analysis of the retrieved data, it can be seen that since 1991, the emerging sport of roliball has experienced four stages. The Start-up stage (1991-2002), the number of relevant patents is very small, only one patent per year, which marks the initial exploration and development of new technology, people began to recognize the potential of roliball this emerging sports project. Then came the growth period (2003-2014), when the number of patents began to gradually increase, with an average of 3 to 10 patents

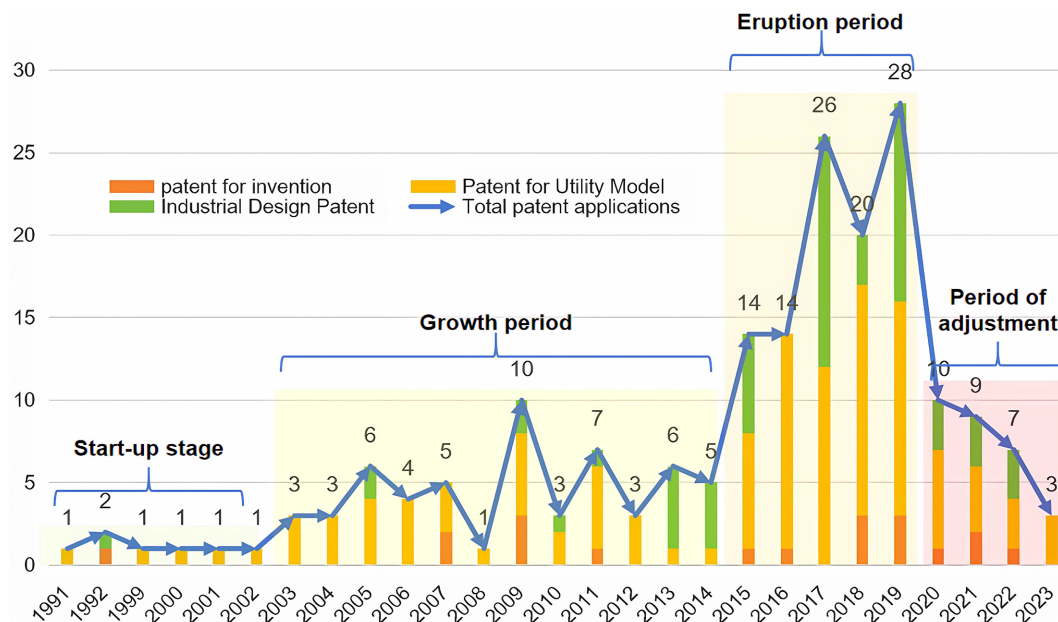


Figure 1. Annual roliball patent application statistics from 1991 to 2023.

per year, which marked the maturity of the technology and the expansion of the market, and the emerging sports began to attract more attention and investment. Since then, it has been a period of rapid development (2015-2019), and the number of patents has begun to grow rapidly, with an average of nearly 20 patents per year, which marks the rapid development of emerging sports and the further expansion of the market, and the technology has been relatively mature and widely used. Finally, there is the adjustment period (2020-present), when the number of patents begins to decline, to less than 10 patents per year, which may be related to the impact of COVID-19, or it may signal that the market is saturated, or the technology has reached maturity, and new innovations and breakthroughs are needed to drive further development.

Three types of patents, namely invention patent, utility model patent and appearance patent, represent differentiated value. The invention patent can reflect the technological innovation ability and maturity of the field; The number of utility model patents and appearance patents can reflect the practical application and market prospect of the emerging sports project; At the same time, the number of different types of patents can also reflect the technical field and competition situation of the project. Combined with **Figure 1** and **Table 1**, it can be seen that: 1) In terms of technological innovation, the total number of invention patent applications of roliball is 19, and the number of licenses is 8, which indicates that roliball has made certain achievements in technological innovation. However, considering the significant increase in the number of applications in the past decade, the maturity of its patent technology innovation and patent quality still need to be improved. 2) In terms of technology application, the cumulative number of roliball theme utility model patent applications reached 115, and showed a fluctuating upward trend, which indicates that roliball utility model

Table 1. Statistics of various roliball patent applications and authorization data.

Number of types of patent applications			Ratio of types of patent applications			Number and ratio of invention patents granted		
Number of invention patent applications	Number of utility model patent applications	Number of appearance patent applications	Gross amount	Invention patent application rate %	Utility model patent application rate %	Appearance patent application rate %	Number of invention patents granted	Invention patent grant rate %
19	115	60	194	9.79	59.28	30.93	8	42.11

patents have a wide range of involvement, and have been carried out in-depth research and development. If these utility model patents can meet the needs of the sports and fitness market and have good application prospects, then they may have good market potential and development prospects. 3) In terms of product appearance design, with the continuous improvement of consumers' demand for product appearance and experience, beautiful and fashionable products can often attract more consumers. The total number of appearance patent applications for the roliball project is 60, and the trend has fluctuated in the past ten years. This shows that there is continuous development and innovation in the appearance design of roliball products. If these appearance patents can meet the market demand, then they also have a certain market potential and broad prospects for development.

3.2. Patent Geographical Analysis and Technical Composition

The geographical distribution of patents is important for understanding technology, markets, innovation, and economics. Through the analysis of roliball patent technology composition, it can realize the mining of technical research hotspots in various countries and regions included in the database. Since roliball related patents are distributed in China, the geographical and technical analysis of roliball patents can be analyzed to Chinese provincial administrative units, so as to grasp the hot spots and technical advantages of Chinese provincial administrative units in roliball technology research and development.

In combination with **Figure 2**, we can see that among 34 provincial administrative units in China, 19 units have roliball invention patent application records, showing regional concentration and gradient characteristics. Specifically, the number of patent applications can be roughly divided into three square matrices. Beijing and Shaanxi, as the first phalanx, highlighted their strong R & D strength and innovation ability with 39.69% of applications. The second phalanx includes five provinces, Guangdong, Fujian, Shanxi, Zhejiang and Shandong, accounting for 37.63 percent of the total patent applications, which may indicate that these regions have formed industrial clusters in related technology fields, which is conducive to technological innovation and industrial upgrading. The third party array includes 13 provinces such as Yunnan, Jilin and Anhui, accounting for 22.68% of patent applications, indicating that technological innovation is gradually

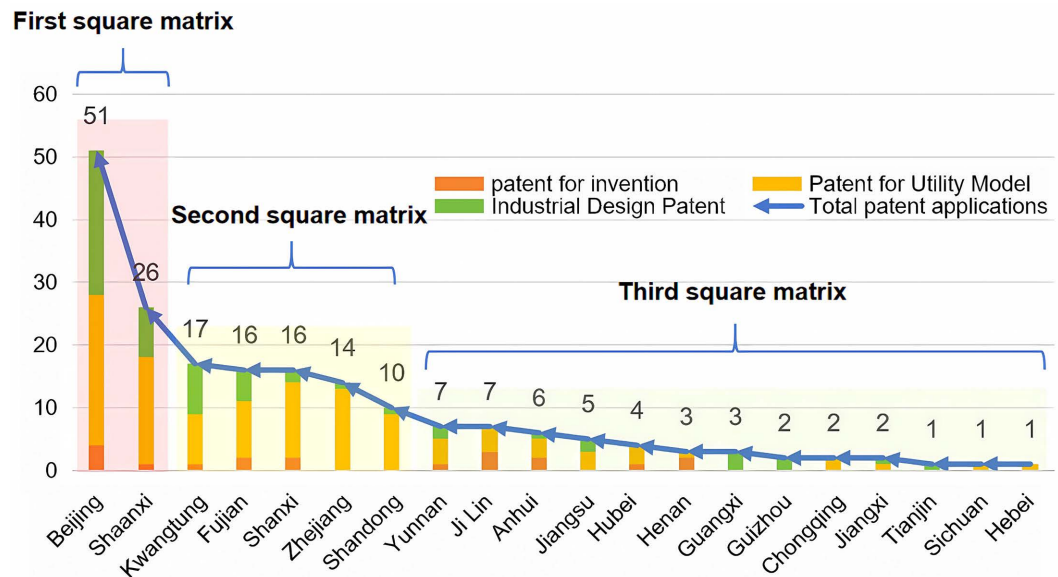


Figure 2. Statistics of Roliball patent applications by provinces and cities in China.

spreading and penetrating into these areas. Overall, there are significant differences in the proportion of patent applications in different regions, which may be related to factors such as economic development level, scientific research strength and policy orientation. At the same time, government policies have an important impact on regional technological innovation activities, and the policies of some regions may be more conducive to promoting technological innovation and development in related fields.

3.3. Analysis of Patent Technical Topics

Through the statistics of the International Patent Classification (IPC) and Locarno classification (LOC) to which roliball patents belong, the specific technical fields involved in roliball technology can be understood, so as to grasp the development trend and hot spots of roliball patents in a deeper level, evaluate its innovation and practicality, and analyze market prospects (Qiu, 2014). And promote dissemination and promotion. IPC classification system includes 8 areas, numbered A-H, as shown in Table 2, the current roliball invention patent IPC covers A (human life needs), B (operations, transportation), F (mechanical engineering, heating, lighting, weapons and blasting) 3 parts, and the absolute proportion of A63B subclass A. This shows that roliball related patents are mainly concentrated in sports equipment, fitness methods and other technical fields, which is consistent with the core field of roliball technology. At the same time, related patents also involve a number of related technical fields, which can reflect that roliball related patents have a high technical diversity and comprehensiveness, with a certain degree of creativity and novelty, as well as a broad market prospect.

The Locarno classification of roliball design patents was statistically analyzed and Table 3 was obtained. As can be seen from the table, roliball appearance

Table 2. IPC subclass statistics of roliball patents applied in China.

Sort	IPC Patent subclass	Quantity	Percentage of total applications for invention patents and utility model patents
1	A63B	127	94.78
2	F21V	4	2.99
3	B29C	4	2.99
4	A61H	2	1.49
5	A61N	2	1.49
6	F21Y	2	1.49
7	B29L	2	1.49
8	A45C	1	0.75
9	B05B	1	0.75
10	B23B	1	0.75

Table 3. Locarno classification of Roliball's design patents.

Sort	Locarno classification	Quantity
1	21-02	56
2	02-04	1
3	21-01	1
4	21-99	1
5	25-01	1

patents are mainly concentrated in “21-02”, with a total of 56. This shows that the current hot spots or comparative advantages of roliball design.

4. Analysis of Innovation Institutions and Patent Value

4.1. Analysis of Patent Applicants

The analysis of patent applicants can further sort out the basic status of different applicants in the technical field and the relationship between them, and provide information support for the in-depth research of subsequent applicants.

From **Table 4**, we can know that the roliball invention patent application institutions are mainly from enterprises (40.72%), individuals and universities accounted for 38.66% and 20.62%, respectively. This is different from the overall characteristics that more than 70% of China's invention patent applications come from enterprises. At the same time, the application sources of roliball utility model patents and appearance patents also accounted for the highest proportion of enterprises (38.14%), followed by individuals (37.63%), and universities accounted for a relatively low proportion (20.1%). This phenomenon may be related to factors such as the low innovation and commercial value of the roliball field, the way of resource allocation, the high innovation ability of individuals

Table 4. Sources of China's Roliball patent application institutions.

Source ^a	Invention patent application agency sources		Source of application for utility model patent and appearance patent		Total number of three types of patent application institutions	
	Quantity	The proportion of %	Quantity	The proportion of %	Quantity	The proportion of %
Corporation	5	2.58	74	38.14	79	40.72
Personage	2	1.03	73	37.63	75	38.66
Colleges and universities	1	0.56	39	20.10	40	20.62
Total	8	4.12	186	94.85	194	100

^aPrimary applicant.

and universities in the roliball field, and the government's encouraging policies for cultural inheritance and academic research.

As shown in **Table 5**, among the top 10 applicants for roliball patent applications, there are enterprises, universities and individuals, among which the first one is the Welfare Plastic Products Factory of Maizidian in Chaoyang District, Beijing. By analyzing the applicant's patent application trend, it can be found that it was the most active application in 2017, reaching 8. Through the analysis of the application trend of the applicants and the combination of **Figure 1**, it can be seen that the applicants applied for the most actively in 2017-2019, and since most of the patents are utility model patent applications, most of them will be disclosed within 1 - 2 years. At this stage, the IPC attributes applied for patents are mostly A63B, which is the hot spot of the applicant's technology research and development.

As shown in **Table 5**, among the top 10 applicants for roliball design patents, 7 are legal persons and 3 are natural persons. It can be considered that the relevant applicants pay more attention to roliball appearance patent applications and have a large number of related appearance patents.

The inventor is the person who actually completes the invention and creation, reflecting the intellectual source of the invention and creation. **Table 6** lists the main inventors of roliball invention patents and utility model patents.

4.2. Analysis of Patent Value for Applicants

The Dawei DPI Patent Index optimized 30 patent indicators from five dimensions—technical value, legal value, market value, strategic value, and economic value—and integrated them into 25, providing users with objective references to judge patent quality and patent value in the form of scores and star ratings. Based on data analysis, it can be concluded that out of the 194 related patents in roliball, only 41 have DPI scores and star ratings, as shown in **Table 7**. According to the DPI value star ratings statistics of the top ten applicants with cumulative application volume, it can be seen that only 7 patents have a star rating of 2.5, accounting for 7.78% of the total application volume of the top ten applicants. The relevant results indicate that the DPI star value of roliball related patent applications is generally low.

Table 5. TOP10 applicants for Roliball design patent.

Sort	Patent applicant	Number of patent applications
1	Beijing Chaoyang District Maizidian Welfare Plastic Products Factory	13
2	Xi'an Huarou Sports Co., Ltd	7
3	Aobolong (Beijing) Sports Development Co., Ltd	5
4	Li Guiyuan	5
5	Zeng Guanghui	4
6	Oberon (Beijing) Sports Development Co., Ltd	3
7	qiannan normal college for nationalities	2
8	Zeng Zhaogui	2
9	Beijing Huaheng Xingye Sports Products Co., Ltd	2
10	Nanning Pinguan Sports Co., Ltd	2

Table 6. Top 11 main inventors of Roliball patents.

Sort	Principal inventor	Total patent applications	Number of invention patent applications	Number of authorized invention patents	Number of utility model patent applications	Number of appearance patent applications	Unit/individual
1	Cheng Ying	17	1	0	6	10	Beijing Chaoyang District Maizidian Welfare Plastic Products Factory
2	Zheng Zhiwei	12	2	1	2	8	Xi'an Obolon Sports Development Co., LTD., Obolon (Beijing) Sports Development Co., LTD., Obolon (Beijing) Sports Development Co., LTD
3	Bai Rong	11	3	3	6	2	Opalon (Beijing) Sports Development Co., LTD., Bai Rong, etc
4	Li Xiaoni	11	0	0	11	0	Xi'an University of Arts and Sciences, Changle Zhiyuan Technology Development Co., LTD
5	Zeng Guanghui	9	1	1	3	4	Zeng Guanghui
6	Tang keke	9	0	0	8	1	Tang keke
7	Quan wenming	7	0	0	0	7	Xi'an Huarou Sports Co., LTD
8	Chang Yanqiu	7	3	0	4	0	Jilin Institute of Chemical Technology, Chang Yanqiu
9	Zhang Limin	6	1	0	4	1	Kunming Danrou Sporting Goods Co., LTD., Zhang Limin
10	Ma Pengfei	5	0	0	5	0	Xi'an Kangle Mei Sports development Co., LTD
11	Li Guiyuan	5	0	0	5	0	Li Guiyuan

Table 7. Roliball patent application cumulative applicant top 10 patent value star statistics.

Sort	Patent applicant	Number of patents applied	Patent DPI star rating					
			1 star	2 stars	2.5 stars	3 stars	4 stars	5 stars
1	Beijing Chaoyang District Maizidian Welfare Plastic Products Factory	27	0	5	1	1	0	0
2	Zeng Guanghui	9	0	1	1	0	0	0
3	Xi'an University of Arts and Science	9	0	0	0	0	0	0
4	Tang keke	9	0	0	1	0	0	0
5	Aobolong (Beijing) Sports Development Co., Ltd	7	0	0	0	1	0	0
6	Xi'an Huarou Sports Co., Ltd	7	0	0	0	0	0	0
7	Oberon (Beijing) Sports Development Co., Ltd	7	0	0	1	0	1	0
8	Xi'an Kangle Mei Sports Development Co., Ltd	5	0	5	0	0	0	0
9	Bai Rong*	7	0	0	0	0	0	0
10	Li Guiyuan	5	0	0	0	0	0	0
2	Zeng Guanghui	9	0	1	1	0	0	0

5. Analysis of Patent Quality and Acquisition

5.1. Comprehensive Analysis of Patent Quality

Patent quality is the premise of patent value, and patent value is the practice of patent quality (Zhou, 2009). According to relevant research on patent quality, the effectiveness of invention patents can reflect the practicability and creativity of patents. If an invention patent can play a role in practical application and has a relatively long time stability, then the quality of this patent may be higher. Meanwhile, the average survival period of effective invention patents refers to the average life of effective invention patents after the application date. Usually, the longer the average survival period, the higher the stability and reliability of the technology, and the higher the commercial application value of the technology (Li, 2018).

According to statistics, there are 125 unauthorized patents out of 194 Roliball patents, which is 64.43% of the unauthorized rate. The average survival period of all kinds of patents is 3.24 years, and the average age of effective patents is 3.64 years. At the same time, in terms of invention patents with higher value in general sense, China authorized 7 Roliball invention patents from 2003 to 2023, and the effectiveness of invention patents is 100%; the average survival period of effective invention patents is 8 years. Given that patents often only pay maintenance fees when the expected benefits brought by the patent are greater than the maintenance fees, and the longer the maintenance time of a patent is, the more importance the patentee attaches to it (Ma et al., 2012). Therefore, from the existing information, it can be judged that the roliball invention patent has a long life and a high effective maintenance rate, and its patent innovation quality and social benefits are good. However, for utility model patents and design patents,

the current value reflected is low.

The citation of patents is also an important factor to judge the quality of patents. Given that Roliball is an emerging sport, and its related patents are concentrated in the field of Roliball sports equipment manufacturing technology, we have included the citation frequency of all patent types in the statistics. The results show that only 34 of 194 patents are cited, accounting for 17.53% of the total number of patents. As shown in **Table 8**, only 11 Chinese Roliball patents have a citation rate of more than 2 times, and the highest citation frequency of a single patent is only 4. And due to the short protection period of utility patents and other factors, the current ownership of related patents is relatively low, and the comprehensive value reflected is not high.

The rights claim and protection scope of patents are important factors to judge the quality of patents. Related studies have shown that the scope of claims of a patent determines the scope of protection, and there is also a positive relationship between the duration of invention patents and the number of claims (Luan & Zheng, 2009). In terms of the claims of the roliball invention patent, it can be seen from **Table 8** that the number of claims in the top 11 cited Roliball invention patents is only 6, which is lower than the average number of claims in the authorized invention patents in China. This indicates that the cited related patents may focus more on certain specific technologies or innovations rather than comprehensively protecting the entire invention. At the same time, it also reflects that in the roliball technology field, the comprehensive protection of patents may be insufficient, which may lead to a lack of motivation for some potential innovators to invest and develop new technologies.

Table 8. Features of Roliball patents cited twice or more.

sort	Invention patent name (patent number)	Cited frequency	Attributable IPC number	Inventor	Transfer or not	Number of patent claims	DPI patent comprehensive value
1	Inflation soft soft-ball (CN2925540Y)	4	3	Han Qing	NO	3	0
2	Tai-Chi soft racquet (CN2756273Y)	3	1	Bai Rong	NO	10	0
3	A kind of one-piece Tai-Chi soft racquet and manufacture craft thereof (CN101721794A)	3	1	Bai Rong	Yes	9	79
4	A kind of noctilucence inflation soft-ball (CN2905133Y)	2	3	Tang keke	NO	3	0
5	Recreation weakened racket (CN101147833A)	2	1	Chang Yanqiu	NO	5	0
6	A kind of Tai-Chi soft racquet (CN201727917U)	2	2	Qiu Suwen	NO	2	0
7	Taijirouli ball (CN202497664U)	2	1	Zhou Ping	NO	3	0
8	A kind of soft-ball (CN204502320U)	2	3	Tang keke	NO	10	0
9	A kind of novel soft-ball bead (CN207679977U)	2	1	Wang Haiying	NO	6	0
10	The manufacturing process and its racket of full carbon Tai-Chi soft racquet (CN110384907A)	2	1	Shu Dongjie	Yes	10	79
11	Flexible racket with detachable racket surface (CN209752112U)	2	2	Xie Xiaohu	NO	5	56

5.2. Analysis of Roliball Patent Transfer and Transfer

Generally speaking, the more times a patent is transferred, the higher the market value of the patent will be, and the higher its quality will be. In addition, the transfer object of the patent is also an important factor in judging the quality of the patent. If the patent is transferred to a well-known enterprise or institution, then its quality will be relatively high. In the 194 roliball-related patents, only 3 have transfer records, and only 2 are effective. This data reflects that there may be low patent market demand, insufficient technical maturity, low value of relevant patents or insufficient promotion efforts for roliball. At the same time, in terms of the transferred patents, they are all A63B subcategories, which indicates that the market application value of this subcategory of roliball patents is higher, which can be focused on in the later stage.

6. Conclusion and Suggestion

6.1. Conclusion

Through multi-angle analysis of roliball related patents, we draw the following conclusions: 1) The development of roliball is uneven at home and abroad. Although roliball has spread and developed in many countries, the distribution of roliball patents is still mainly concentrated in China, and the spatial distribution in China shows agglomeration and regional differences. This may be closely related to the origin and development of roliball, but also may be related to the degree of attention and resources invested in roliball in various countries. 2) Roliball needs to be driven by innovation and development. From the trend of roliball patent applications, it can be seen that roliball related research and development activities are currently in the stage from the outbreak period to the adjustment period. Despite the impact of the COVID-19 pandemic in recent years, this also reflects the fact that roliball really needs technological innovation to drive its continued development. 3) The realization of roliball patent value needs to be improved. Currently, roliball-related patents must be traded on the market in order to realize their value in the production or licensing of products. However, the current situation of different types of patent application authorization, life cycle and application subject shows that there are great differences among the three, and there are also differences in the conversion situation between different application subjects. Therefore, in order to better realize the value transformation of roliball patents, relevant inventors need to improve their awareness of patent protection and application skills.

6.2. Suggestion

In view of the above conclusions, the following suggestions are put forward for relevant interest groups: 1) Strengthen international cooperation and exchanges: In order to promote the global development of roliball, China should actively strengthen cooperation and exchanges with relevant foreign organizations and enterprises. By sharing experience, technology and resources, we jointly promote

the international dissemination and development of roliball. At the same time, by establishing partnerships with international organizations and sports bodies, roliball can increase its visibility and awareness on a global scale. 2) Encourage technological innovation and market development: in view of the current roliball related patent technology innovation and its actual use is not enough, relevant organizations and enterprises should be encouraged to increase the intensity of technological innovation and market development. Through in-depth exploration of the differentiated needs of different global markets, targeted technological innovation and product development. At the same time, combined with the current development trend of cutting-edge technology, to promote the integration of roliball with various markets including emerging technologies such as AI and MR, and develop more innovative and practical products and services. 3) Improve inventors' awareness of patent protection and application skills: In order to improve the quality and ability of the entire industry, training and guidance for inventors should be strengthened. Train more professional talents and technical backbones, especially international roliball patent talents with international vision and cross-cultural communication ability. By improving the patent protection awareness and application skills of inventors, the quality and conversion rate of related patent applications can be improved. At the same time, establish a sound patent management system and incentive mechanism to encourage the transformation and application of innovative results. 4) Strengthen policy support and resource investment: The government should increase policy support and resource investment for the roliball industry. By formulating preferential policies and providing financial support, more enterprises and individuals are encouraged to participate in the development of roliball. At the same time, we will strengthen cooperation with educational and scientific research institutions to jointly promote the research and development and innovation of roliball technology (Chen, 2023). In addition, roliball can also enhance its influence and competitiveness on a global scale by holding international events and activities.

Acknowledgements

Thanks to Prof. Zhang Dongsheng, Prof. Bai Rong, Prof. Chen Xiaorong and Prof. Li Enjing for their help in the research of this paper.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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