УДК 681.11.03

WATCH STONES: ELEGANCE AND PRACTICALITY

Lagunova M.A., student
Scientific supervisor – Lichevskaya S.P., senior lecturer
English language department №1
Belarusian National University of Technology
Minsk, Republic of Belarus

The watch is a great technical invention with a long history. Stones are an important component of modern watch movements. Watch stones are not just an attractive watch frame, but a necessary part of the mechanism that directly affects the quality.

In the NIHS 94-10 standard, adopted in 1965 by the Swiss organization Normes de l'industrie Horloge Suisse, the function of watch stones is defined as follows: «To stabilize friction and reduce the degree of wear of the contacting surfaces of the mechanism» [1, p.78].

Nowadays synthetic rubies are used as stones (the name jevels – precious) is fixed behind them, but the first watches were equipped with expensive stones in the mechanism and appeared in 1704.

The ingenious idea of using natural rubies in the internal mechanism of the watch is inherent in the Englishman George Graham [2]. He became famous for his invention of the free anchor escapement mechanism, which is still widely used today. Graham was the first to realize that by reducing the coefficient of friction, high quality could be achieved. He is credited with many pocket watches that utilized only the modern technology of the time. And from 1725 onwards, all of his watches featured real rubies.

There are 4 types of watch stones: through, overhead, pallets and pulse. Through stones take on loads in the axial supports, overhead ones reduce the friction that occurs in the places where the moving parts of the caliber interact with each other. Pallets ensure stable operation of the anchor fork. Pulse stones are balance ellipses, that is, they transfer energy to the balance regulator.

Natural rubies are immensely expensive. The extraction of natural minerals is done by manual method. The method is the same as it was hundreds of years ago. The disadvantage of this method is that the probability of damaging or breaking a ruby is very high. The process requires

a great deal of physical strength. However, it requires a special permit, which costs a lot of money. However, even here man has proved himself. Ruby is the first gemstone that could be reproduced in the laboratory. Artificial stone is neither physically nor chemically different from natural stone, but its price is much lower. A successful experience belongs to the French scientist Auguste Verneuil [3], who managed to create a completely artificial large corundum ruby. Nowadays, artificial ruby is the perfect material that is used in watches [4]. Its excellent characteristics ensure high wear resistance, great hardness, ease of processing and the possibility of extremely high quality polishing. But this is not the only thing that makes artificial ruby so sought after. It results in the smooth and flawless operation of all watch mechanics.

It is not uncommon to see the inscription 17 (or another number of stones) on the dial of a watch. Rubies in the mechanism can carry both a working and aesthetic purpose. For example, a luxury wristwatch may have as many as one hundred stones under its cover, but only one-fifth of them have the function of reducing wear on the drive axles.

Thus, watch stones are a vivid example of combining functionality and artistic creativity in the field of technical devices.

References

1.Епифанова, Е. Роман с камнем / Е. Епифанова // Мои часы. – 2003. – № 1. – С. 78-81. [Электронный ресурс] – Режим доступа: https://dokumen.tips/documents/-1-2003-.html?page=80. – Дата доступа: 15.02.2024.

2. Драгоценные камни времени. Информационный часовой портал Pam65.ru [Электронный ресурс] – Режим доступа: http://www.pam65.ru/watchmagazine.php?pageId=54. – Дата доступа: 17.02.2024.

3. Элуэлл, Д. Огюст Вернейль. Искусственные драгоценные камни [Электронный ресурс] – Режим доступа: https://www.bibliotekar.ru/spravochnik-50/9.htm – Дата доступа: 17.02.2024.

4. Особенности процесса добычи и обработки рубинов. Нефтегазовая и горнодобывающая промышленность России [Электронный ресурс] – Режим доступа: https://uglevodorody.ru/publ/osobennosti-processa-dobychi-i-obrabotki-rubinov – Дата доступа: 18.02.2024.