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LOBSTER'S HELP IN CREATING AN X-RAY MACHINE

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Do you think that someone, except the man, can boast of creating such a wide range of technical devices? But are people really brilliant inventors? After all, no matter what problem we solve, what device or mechanism we develop, an existing comparable creation will certainly be found in the universal workshop - nature. Wildlife is an unsurpassed technologist, designer, engineer and, of course, a builder.

Undoubtedly, no one is going to dispute the great achievements of Wilhelm Conrad Roentgen. In 1895, he discovered X-rays, which entered the history of science and society under the name "X-rays".

On the contrary, in wildlife, lobsters have the ability to “shine through” objects. The unique visual system allows the animal to see reflected light rather than refracted light. Their eyes are covered with almost perfectly square "mirrors" that do not refract and scatter light like human eyes. They reflect it at a certain angle. Thanks to this, these creatures can see perfectly in turbid water and in the dark. It is interesting that not all crustaceans possess such a system of vision, only those who belong to the family of long-bodied decapod crustaceans. This family includes lobsters and shrimp. All other crustaceans have completely ordinary eyes with a system of light refraction. Based on the lobster's unique vision system, scientists of the Physical Optics Corporation have invented the Lobster-Eye X-ray Inspection Device (LEXID). The US Department of Homeland Security has already invested $1 million in the project.

The device encompasses a low-power X-ray generator and an optical system made up of thousands of metals, highly polished squares that reflect and

align the X-rays as they are directed to the object of interest. The parallel emission of the beams allows them to hit a much smaller area at the same time, which contributes to a deeper penetration of the X-rays.

Instead of detecting the X-rays passing through an object, LEXID detects rays that scatter back into the device. The optical system collects and focuses these backscattered rays, collecting all the reflected rays into one focal point, instead of analyzing diverging rays at different points in the system. The ability to focus all the reflected light onto a smaller area provides a more accurate sensory experience. This scanning system is really efficient.

LEXID can easily see through concrete, wood and steel up to 3 inches (75 mm) thick. Actually, X-rays are harmless to human's vision. It means that using the scanner while working with people is much safer than using contemporary systems, since the radiation exposure is less.

There is only one example of modern equipment in the creation of which an invaluable knowledge about wildlife was used. But in fact, there is a large number of such technologies that have appeared a long time ago. And every day we come across them, for example: GPS, Velcro, zippers and even a piston syringe.

References

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