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Broken light bulb extractor tool

Before the invention of the light bulb, illuminating the world after the sun went down was a messy, demanding, dangerous task. It took a bunch of candles or torches to fully light up a large room, and oil lamps, while quite effective, tended to leave a remnant of soot on something in their general vicinity. When the science of electricity really got underway in the mid-19th century, inventors everywhere were clinging to devising a convenient, affordable electric home lighting device. Englishman Sir Joseph Swan and American Thomas Edison both got it right around the same time (respectively in 1878 and 1879), and within 25 years millions of people around the world had installed electric lighting in their homes. The easy-to-use technology was such an improvement over the old ways that the world never looked back. The amazing thing about this historic turn is that the light bulb itself could hardly have been easier. The modern light bulb, which hasn't changed drastically since Edison's model, consists of only a handful of parts. In this article we will see how these parts come together to produce bright light for hours. Light Basics Light is a form of energy that can be released by an atom. It consists of many small particle-like packages that have energy and momentum, but no mass. These particles, called light photons, are the most basic light units. (For more information, see How Light Works.) Atoms release light photons when the electrons get excited. If you've read How Atoms works, you know that electrons are the negatively charged particles that move around a atomic nucleus (which has a net positive charge). An atomic electrons have different levels of energy, depending on several factors, including their speed and distance from the nucleus. Electrons of different energy levels occupy different orbitals. Generally speaking, larger-energy electrons move in orbitals further away from the core. When an atom wins or loses energy, the change is expressed by the movement of electrons. When something passes energy on to an atom, an electron can be temporarily increased to a higher orbital (further away from the core). The electron holds only this position for a small fraction of a second; almost immediately it is pulled back towards the core, to its original orbital. When it returns to its original orbital, the electron releases the extra energy in the form of a photon, in some cases a light photon. The wavelength of the emitted light (which determines the color) depends on how much energy is released, which depends on the special position of the electron. Accordingly, different types of atoms will release different types of light photons. In other words, the color of the light is determined by what kind of atom is excited. This is the basic mechanism at work in almost all light sources. The main difference between sources are the process of exciting atoms. In the next section we will look at the different parts of a light bulb. Light bulbs have a very simple structure. At the base they have two metal connectors, which connect to the ends of an electrical circuit. The metal connectors are attached to two rigid wires, which are attached to a thin metal filament. The filament sits in the middle of the bulb, held up by a glass bracket. The wires and filament are placed in a glass bulb, which is filled with an inert gas, for example, argon. When the bulb is connected to a power supply, an electrical current flows from one connector to the other, through the wires and filament. Electric current in a solid conductor is the mass movement of free electrons (electrons that are not tightly bound to an atom) from a negatively charged area to a positively charged area. When the electrons glide along through the filament, they constantly bump into the atoms that make up the filament. The energy of each impact vibrates an atom - in other words, the current heats atoms up. A thinner conductor heats up more easily than a thicker conductor because it is more resistant to the movement of electrons. Bound electrons in vibrating atoms can be temporarily increased to a higher energy level. When they fall back to their normal levels, the electrons release the extra energy in the form of photons. Metal atoms mostly release infrared light photons, which are invisible to the human eye. But if they warm up to a high enough level - around 4000 degrees Fahrenheit (2200 degrees C) in the case of a light bulb - they will emit a good deal of visible light. The filament of a light bulb is made of a long, incredibly thin length of wolf frame number. In a typical 60-watt bulb, the tungsten filament is about 2 meters long, but only one hundredth of an inch thick. The tungsten is arranged in a double coil to fit everything in a small room. That is, the filament is discontinued to make a coil, and then this coil is wound to make a larger coil. In a 60-watt bulb, the coil is less than an inch long. Tungsten is used in almost all incandescent lamps because it is an ideal filament material. In the next section we find out why this is, and we will examine the role of the glass bulb and inert gas. We'll look at what the filament is made of in the next paragraph. Not all light bulbs are the same. Some have smart home features, others are energy sippers. Some can be controlled by Wi-Fi, while others change colors. This week we want to know which ones you think are best, or are on the smart home wish list. It may seem silly to ask for the best light bulbs, but we are willing to bet that some of you have thought about which LED bulbs, CFLs or other bulbs are durable, last longest, let you control the lighting in your home, are affordable and have others and whistles you like. If you have a favorite, let us know in the discussions below. Let's hear your voice in the discussions below! To cast your vote, follow these guidelines:Follow this format for your vote, including the bold printout. A picture of the best light bulbStem: [BEST LIGHT BULB] Why: Explain why this bulb is the one you think is the best! Maybe it's energy efficient, and guaranteed to last. Maybe it has Wi-Fi and can be controlled from the smartphone. What makes it the one you would recommend to others, and why? Make your case! Don't duplicate nominations! Instead, if someone has nominated your choice, star (recommend) it to give it a boost, and respond with your story instead. Please do not leave non-entry, direct comments on this post. They just want to be pushed down. Save your stories for other people's submissions! If you're not sure what we mean, just check out the nominations of our authors below. We will give you a head start and they should all be in the right format so that you can only follow our lead. Hive Five is our weekly series where you vote on your favorite apps and tools for a given job. Have a suggestion for a topic? Send us an email at tips+hivefive@lifehacker.com!Photo by John Loo. Photo: lifx.coLight bulbs didn't change for decades - no doubt for a whole century. But then, somewhat suddenly, a confluence of scientific, cultural, political and technological factors combined to create a special set of circumstances that allow the use of this - a \$99 light bulb. No, it is not glazed in gold or encrusted with jewels; The impressive sticker price owes only an impressive range of features. And people are very excited about the whole thing. When LIFX, the manufacturer of the bulb, set out to raise \$100,000 in funding through Kickstarter in 2013, it ended up generating, in just six days, well over \$1 million. A year later, the LIFX bulb had gone on sale on Amazon, and the most tech-savvy homeowners began experimenting with this WiFi-enabled, multi-color, energy-efficient LED. Even when it's off, LIFX looks like no other light bulb you've ever seen. There is no glass ball, but rather a flat-topped plate on top of a textured plastic body. But the most remarkable thing about LIFX is that you can control the bulb from your smartphone or tablet, modulating not only the brightness, but also the color. At a swipe, you can settle for a standard LED color or choose any of the millions on the spectrum between warm white and cool. What saves the color options from being a pure novelty is that you can temper your range with a layer of white light, thus creating a colored shade that flatters your home décor while creating an appealing atmosphere, be it resilient or calm. LIFX even a variety of set-ups, so you can transform the mood of your house with one tap. Photo: Photo: get started with LIFX, there is no peripheral hardware to set up; the bulb can be used as soon as you remove it from the box. You just turn it into the connector and connect it to your home network using the free LIFX app. While many other smart home products on the market excite with their options but scare with their complexities, LIFX bulbs are welcoming and instantly useful to everyone, tech geeks and Luddites alike. But if you've followed the Internet of Things movement closely, what you might find most interesting is the third-party integrations. For example, LIFX syncs with the Nest Learning Thermostat and the Nest Protect smoke detector, and it even has an IFTT channel. That means you can program the lighting to dim after 10pm or to hear rate when an email comes from a particular someone. Any number of configurations is possible. It's up to you - if you decide unlimited lighting options are worth \$99. Buy LIFX WiFi Enabled Multicolor Dimmable LED light bulbs, \$99 Photo: istockphoto.comIncandescent light bulbs are known to occasionally smash into their fixtures - and when they do, it's both difficult and dangerous to extract the bulb's threaded base from the socket. Pieces of broken glass and the risk of electric shock should make someone think twice before trying to take out what is left of the bulb. Fortunately, there are a number of strategies for how to remove a broken light bulb without using your hands, and you'll probably have at least one of these three tools on hand: a pair of needle stick, a raw potato or a commercially sold broken pear extractor. First, it's first: Disconnect the power to avoid being shocked. For a lamp, just disconnect it. For wired lighting, turn the light off and connect the power to the room by the switch or fuse box. It is advisable to cover the floor with a tarpaulin to catch some rogue glass (if not, be sure to thoroughly vacuum up the area afterwards, just in case). And be sure to put on eye protection and protective gloves before you start. Although it is tempting to recycle glass incandescent bulbs after restoring their bases, this is not recommended. They are not worth candidates for recycling because they contain small wire filaments and metal pieces too difficult to distinguish from the glass. And unlike other types of light bulbs, such as CFLs, incandescent bulbs do not contain dangerous toxins such mercury that need to be thrown away and recycled carefully. So go on throw them in the trash (just make sure to pack them well so that the glass will not puncture the bag, which can harm someone who handles the garbage). Tools & MaterialsPhoto: istockphoto.comBulb Removal Technique #1: Needle Nose PliersThis method is simple, but proceed slowly and gently that you do not damage the light fixture. Take a pair of needle nose pliers toolbox and carefully grasp the metal edge of the base of the bulb; bend it slightly inward if you need to get a better grip. With the pliers firmly attached to the broken light bulb, try to gently turn it off. If it does not budge right away, repeat the process of bending the metal on the base inward into a few more spots until it begins to budge or the base breaks completely apart. Then remove any remaining residue and discard them and the bulb in the trash. Photo: istockphoto.comBulb Removal Technique #2: Raw PotatoRemember that grade school experiment when the teacher powered a light bulb using a potato? It turns out that potatoes can do even more for light bulbs than just providing electricity. They can be used to safely extract the broken end of a light bulb from the socket. There are two ways to try this method. First, cut a medium-sized raw potato in two, short ways. Wipe off excess moisture with a paper towel, then slide the cut end of the potato firmly onto the base, as deep as it will go - the glass filament support on the base of the bulb and any broken pieces of glass protruding from the base should cut through the potato and tie the two together. Turn the potato counterclockwise until the lamp base starts to unscrew. Remove the broken light bulb base, discard the potato and pear, then pat out any part of the luminaire that may be wet. If that attempt fails, you may need a tighter fit. Then cut around the end of the other half of the potato in a cylinder to fit tightly inside the socket (not imminent screw threads, as the previous method allows). Press it firmly into the bottom of the lamp until it is firmly attached, turning the potato counterclockwise until it turns the base together with it. Photo: istockphoto.comYou may already have a commercial bulb extractor on hand or decide now it's time to buy one. Available for around \$10 home improvement centers and well-rounded online stores (see this well-reviewed tool from Bayco on Amazon), these tools are usually designed to extract both standard size or smaller incandescent bulbs. They have rubber tips that you just wiggle into the base of the bulb, similar to the other methods, and rotate counterclockwise. If you have a choice of options in the store or online, consider choosing one with a base that allows it to be screwed on a longer threaded rod – that way you have the flexibility to use it again if you need to remove tricky overhead lights in the future. Future.

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