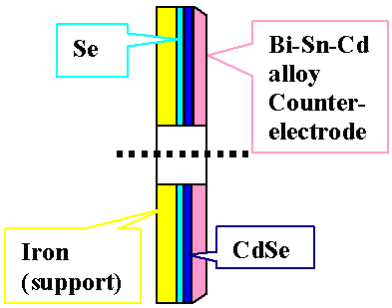
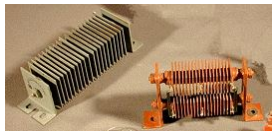
Selenium

Advanced

- What is (and was) **Se** good for? An interesting story can be told here.
  - **Se** was good for making rectifiers for **250 V DC**, always needed for running the vacuum tubes in radios and early **TVs**. The rectifying junction consisted of **Se - CdSe**, and it worked without anybody knowing why.
  - Many tablets as shown below were switched in series (with a central screw) as shown in the top picture or, in somewhat later developments, contained in a flat housing



Se - CdSe rectifier tablet



Selenium based rectifiers for **250 V**.
Bottom: Famous Siemens&Halske bridge rectifier
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- This is just one example of semiconductor technology that existed before semiconductor theory was "invented"
  - Other examples are the **Cu**-Oxide rectifier ("Kupferoxydul") and, most important, the early **"crystal detector" radio**.
- Working with **Se** rectifiers had one side effect that is practically unknown with today's semiconductors. Whenever the contraption blew up (which happened every now and then) it emitted the most unpleasant smell imaginable because some **Se** compounds where produced (**HSe** is the stinkiest gas known to humankind, and all other **Se** gases are similar in that respect).
  - That helped to diagnose the cause of malfunctioning radios and gave rise to a word play only possible in German: Selengleichrichter = Selen-gleich-riecht-er.