



The Bessemer Process

BY NIKKI



Who invented it?
What was it?
Why?

- The Bessemer Process was first invented by Sir Henry Bessemer in the early 1850's
- It was a way to efficiently melt metals in less time and cut off laborers
- It was created since metals were needed to build such as, other inventions, buildings and railroads.

Problems and Consequences

During the process of melting iron there were two main set-back that caused major problems for the inventors

Phosphorus: Caused sticking of light-gage (thickness) sheets when used to attach steel. It also increases cracking in welds which is very important when building railroad tracks which benefited the forming of the Industrial revolution.

Sulfur: Lowers the ductility (Measure products ability to crack under pressure). It also causes the metals to have a higher chance to get destroyed easier in the future

Together they lower the toughness of the steel and causes it to be really brittle.

Solutions then and now

Then: The biggest change that was made back around 1877 was the lining on the inside. The reason why it was change was since the fireclay lining the originally used couldn't take away the phosphorus and the sulfur which were damaging the metals.

Now: The changes that have happened now were addition of flux hoppers, gas flues and coking coal

Future views

When I think about how it would look in the future, I think of a more efficient way to melt more metal at one time. It would have a pipeline of burners, 5 burners each pipe and have gas flues that bring the gases released from melting and convert it into fuels so that the gases won't just go into the atmosphere and pollute the air. By that I mean since there are ways to convert greenhouse gases into useable fuels it should be a way to power melting metals.

Bibliography

Saville, James Patrick. "Henry Bessemer." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 11 Mar. 2020, www.britannica.com/biography/Henry-Bessemer.

McNamara, Robert. "History and Impact of High Quality Steel in the 1800s." *ThoughtCo*, ThoughtCo, 2 Apr. 2019, www.thoughtco.com/bessemer-steel-process-definition-1773300.

"Bessemer Process." *Gale Encyclopedia of U.S. Economic History*, Encyclopedia.com, 12 Mar. 2020, www.encyclopedia.com/earth-and-environment/minerals-mining-and-metallurgy/metallurgy-and-mining-terms-and-concepts/bessemer-process.

"Bessemer Process." *Bessemer Process - an Overview | ScienceDirect Topics*, www.sciencedirect.com/topics/engineering/bessemer-process.

"Franklin Pierce." *For Kids: Cheap Steel Production ****, Siteseen Limited, 9 Jan. 2018, www.american-historama.org/1850-1860-secession-era/bessemer-process.htm.

Sandler, et al. "Effect of Sulfur and Phosphorus on the Properties of Steel 18B." *Metal Science and Heat Treatment*, Kluwer Academic Publishers-Plenum Publishers, 1 Jan. 1968, link.springer.com/article/10.1007/BF00664052.

Straterra. "Making Steel without Coal." *Lets Talk About Coal*, 16 June 2018, www.letstalkaboutcoal.co.nz/future-of-coal/making-steel-without-coal/.

Bell, Terence. "How Is Metallurgical Coal-Coking Coal-Used?" *The Balance*, The Balance, 15 July 2019, www.thebalance.com/what-is-metallurgical-coal-2340012.

"Converting Greenhouse Gas into Fuel." *Main*, energy.mit.edu/research/converting-greenhouse-gas-fuel/.

[https://www.thoughtco.com/thmb/oyqdhX_2cq3x6pEZQeuXcorTy7E=/768x0/filters:no_upscale\(\):max_bytes\(150000\):strip_icc\(\)/Bessemer-process01-3000-3x2gty-58b4e7c75f9b586046963aff.jpg](https://www.thoughtco.com/thmb/oyqdhX_2cq3x6pEZQeuXcorTy7E=/768x0/filters:no_upscale():max_bytes(150000):strip_icc()/Bessemer-process01-3000-3x2gty-58b4e7c75f9b586046963aff.jpg)

https://inteng-storage.s3.amazonaws.com/img/iea/3gG9db7aOV/sizes/bessemer-1_resize_md.jpg

https://upload.wikimedia.org/wikipedia/commons/6/64/Bessemer_Convertor_-_geograph.org.uk_-_892582.jpg