Solutions for a Sustainable Future:

Dear Mr. Comfort: I was watching TV recently and they were exposing some of the misconceptions and misrepresentations within the Duct Cleaning and Air Purification Industries. Can you tell me some of the history behind Air Purification and perhaps sometime in the future provide more detailed analysis of Duct Cleaning and IAQ products so people can avoid being taken advantage of. L. Thatcher.

An enemy you can't see, taste, or touch is not far from you as you read this sentence. It's not an enemy that you can avoid. This enemy kills us by working with the very thing we can't live without… breathable air.

Chemicals, odors, exhausts, molds, bacteria, viruses, toxic fumes are as ubiquitous today as people, cars and factories. And if it wasn't for inventions like the following you might well drop dead before you finished this line (Ok, a slight exaggeration, but it got your attention). This is only a partial list, but some of the more interesting ones.

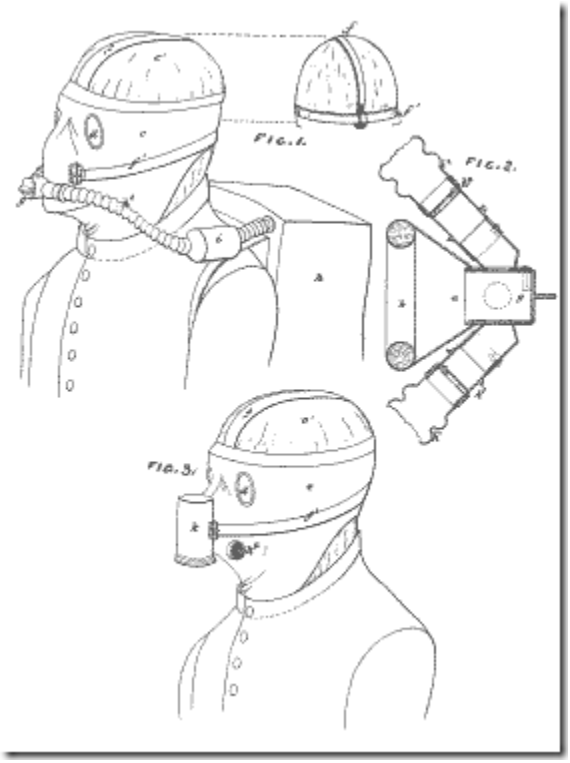
1. The Stenhouse gas mask, 1854

A chemist by trade, John Stenhouse began experimenting with charcoal filters as an air purifier as early as the 1850's. The unit he devised called for wire gauze "filters", which held powdered charcoal as the filtering ingredient. His findings led to the invention of the gas mask, used in London factories as a personal "air purifier" to protect workers from toxic gas.

2. Carbon Filtering – 1862

The carbon filter was invented in 1862, and was originally used to purify water. Its transition into an air purifier occurred in 1872, when Allen and Alvin E. Rice advanced the technology by creating a 2 stage filtration based on activated carbon. In modern day, air purifiers built around the carbon filter are used to purge air of vapors, odors, and hydrocarbons… as well as the basis of today's spacesuit breathing system.

3. Barton's respirators, c. 1874



In 1874, Samuel Barton filed for patent for the canister gas mask… one of the most advanced air purifiers of the time. Air impurities where lifted as the user inhaled through a tri-layer filtering system, which was strapped to the face via head harness and face cover. The invention also included a revolutionary air recycling system, whereby clean air was cycled through a secondary filter to remove carbon dioxide.

4. First Vacuum – 1901

While riding the train, Hubert Cecil Booth began breathing dust laden air through a handkerchief during a moment of inspiration. The moment spurred Booth on to the 1901 invention of "Puffing Billy", the world's first vacuum cleaner. The unit ran on an oil engine and is a precursor for more advanced air purifier systems.

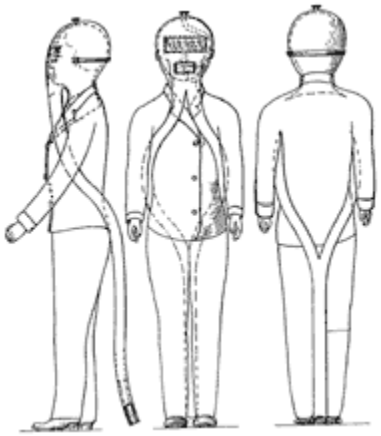
5. First Air Conditioner – 1906

Patents #808 and #897 are the soil from which today's air conditioner bloomed. By using centrifugal force and a complex system of filters and coolants, Carrier (the unit's inventor) birthed a robust air purifier and cooling system. Not only did his invention purify air and control temperature, but it also curbed humidity and manipulated air circulation.

6. Electrostatic Precipitator – 1908

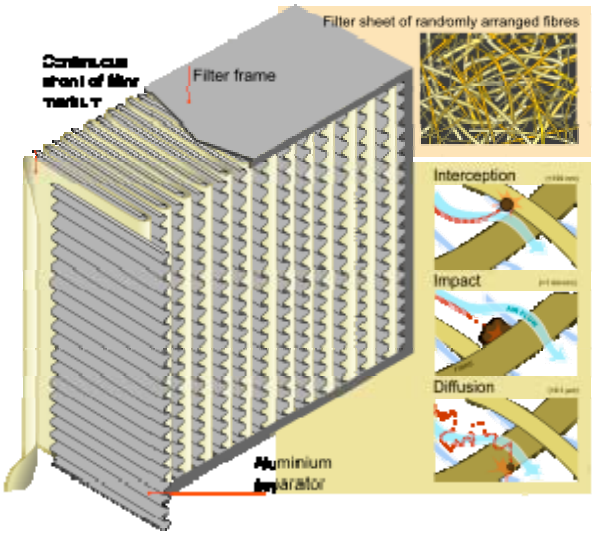
Dr. Frederick G. Cottrell invented the electrostatic precipitator, a device which created and collected charged particles. Cottrell's apparatus found use in smelting factories and vineyards, where sulfuric acid and lead oxide fumes which once polluted the air could be collected and eliminated. The technology evolved to become a key component in many air purification units.

7. The First Personal Air Purifier – 1914



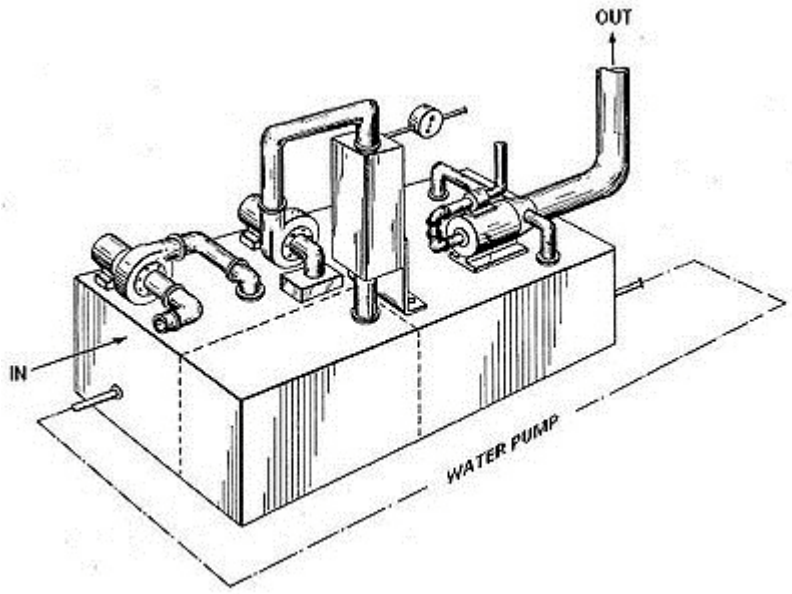
Garret Morgan filed for patent in 1914, having invented a device that resembles the mask of an ancient scuba diving suit. A long tube runs from the mask down to the floor, sitting below lighter-than-air gases. The filter in the "air purifier" itself mimics the body's mucous membrane, cleansing inhaled air by running it through a wet sponge lining. And what does a user do when the gas is heavier than air? Elevate the tube above the gas…

8. HEPA – Filters – 1940's



The USA Atomic Energy Commission invented the HEPA filter during the Manhattan Project, seeing a need for a system to clean air contaminated with radioactive particles. After World War 2, the HEPA filter was released to the public and is now used by air purifier companies as a heavy-duty filtration device.

9. Rufus Stokes – Air Factory Purification Device, 1968



Rufus Stokes invented the “clean air machine”, a device used on smoke stacks to clean the emissions. His invention drastically reduced the amount of ash and gases that made it beyond the stacks, leaving behind virtually transparent releases. The boost in air quality improved the health of people, plants and animals living in the vicinity of commercial furnaces and power plants.

10. NASA Space Air Cleaner Laser – 2004

NASA created the Low-Temperature Oxidation Catalyst (LTOC) in 2004. LTOC began as a method for lasers to control carbon monoxide in space. Now, researchers are finding

applications for air purification on Earth, using the tech in automobile catalytic converters.

I am Jim Steigner (Mr. Comfort) and I just wanted you to know. Special thanks to Larry T. who reads the journal online from Florida for his question (s). I will address the investigative research piece on Duct Cleaning next week. I agree it was an eye opener. As always please feel free to contact me at www.mrcomforthvac.com under the "Ask Mr. Comfort Section with any questions, thoughts or ideas.