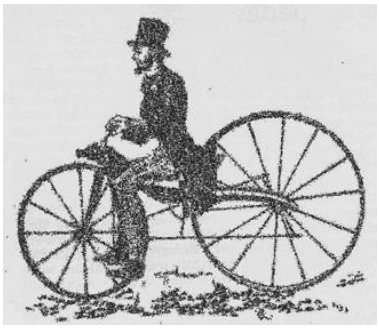
That's right! It is no secret that Scotland is famed for her inventive minds.

Let's imagine for a minute a world without the telephone, or the television, flushing toilets (yikes!), MRI machines or the hypodermic syringe. Scotland's innovative and inventive spirit is undeniable, providing the world with life-changing ideas and products that have enriched the lives of countless people across the world, so let's explore some of the lesser-known ones a little further...

Bicycles



If there is one thing that Scotland is not short of is an eccentric or two! And the inventor of the bicycle was just that. Kirkpatrick Macmillan was a blacksmith from Dumfriesshire who, around 1839, designed the first pedal bike in order to get to work faster in the mornings. Unfortunately, Macmillan forgot to patent his design, or perhaps just never got round to it. Sadly, because of this, there is doubt as to whether Macmillan really was the inventor, however in 1842 a Glasgow newspaper reported that an anonymous "gentleman from Dumfries-shire.. bestride a velocipede...of ingenious design" knocked over a pedestrian in the Gorbals area and was fined five British shillings!

The Colour Photograph

James Clerk Maxwell is perhaps better known for being the father of modern physics, famed for his formulation of electromagnetic theory, with his name ranking high alongside Sir Isaac Newton and Albert Einstein when considering his contributions to the world of science. However, he was also responsible for the first colour photograph, introducing the 'three colour process' in 1855 and then displaying the colourful still (of a tartan ribbon no less) for the very first time at one of his lectures. The colour image was achieved by photographing three times through red, blue and yellow filters and then recombining the image into one colour composite.

Penicillin

Okay, not exactly one of the lesser-known ones and perhaps more of a discovery than an invention, but in my opinion you cannot have an article on the contributions of great Scots without mentioning Sir Alexander Fleming. As I write this I am at the mercy of that wretched virus that has dominated our lives for the past two years, however thanks to the success of modern medicine, the two vaccines and my booster have reduced my symptoms to what feels like a bad cold. It is fair to say that in the last few years I find myself being more and more grateful for the innovations of those who dedicate their lives to the medical field and few have saved as many lives as Alexander Fleming. Inspired by the unimaginable wounds that he witnessed during WWI and the realisation that the antiseptics used at the time often made the wounds worse, Fleming began experimenting with bacteria culture and in 1928 discovered penicillin after leaving culture plates out in his laboratory while he went on holiday with his family. On his return he noticed that one culture was contaminated with a fungus, and that the bacteria colonies immediately surrounding the fungus had been destroyed. Fleming grew the mould in a pure culture and found that the culture broth contained an antibacterial substance. Fleming was a recipient of the Nobel Prize and in 2009 was voted the 3rd greatest Scot behind Robert Burns and William Wallace.

Fingerprinting

We've all seen the drama fuelled, criminal investigation shows such as NCIS or criminal minds, or have succumbed to bingeing one of the many Netflix documentaries that attempt to crack the case of unsolved gritty crimes. These shows are based, somewhat(!), on genuine forensic science techniques to identify criminals and it is hard to imagine the struggle in doing so without the practice of fingerprint identification.

From the great mind of a Scottish doctor, Henry Faulds back in 1880, who came up with the idea while working on archaeological digs in Japan and noticing fingerprints on shards of ancient pottery. Examining his own fingertips and those of friends, he became convinced that the pattern of ridges was unique to each individual.

The Kaleidoscope

What had you achieved by the time you were ten years old? I can confidently say that I was doing a really great job destroying all my shoes by pretending to be Indiana Jones and was easily the best singer in my family (not very impressive if you heard any of them sing!). Well, at ten years old David Brewster (later, sir), from the small town of Jedburgh, had built his own telescope from scratch. Gifted with remarkable intelligence, Brewster's interest in optics led him to invent the staple of every child's toy box, the Kaleidoscope, in 1816. Sadly, he never profited from his invention due to an error at the patent office, allowing his work to be copied.

Gin and Tonic

Ok, so maybe not the most essential of inventions! This quintessential British tipple dates back to the 1700s when Scottish doctor George Cleghorn found the drink to be an effective treatment for malaria. The drink was enhanced further by British soldiers in India in the 1800s, who added lime and sugar to counteract the bitter taste.

We all know that this is just the tip of the iceberg as I haven't mentioned James Watt's Steam engine, Alexander Graham Bell's telephone or even Glasgow's famous chicken tikka masala (trust me, if you ever visit, you MUST try it!). So what's your favourite? I must say, I do enjoy a wee gin in front of the television every now and then, it helps soften the blow of never actually becoming a famous archaeologist/explorer!

Kyle Granite