

How Things Get Invented





Jet Plane



Automobile



Pizza Cutter



Safety Pin

Many things we use were invented. How do people get ideas for inventions? How do they turn their ideas into new and useful things? Here is the story of one invention.



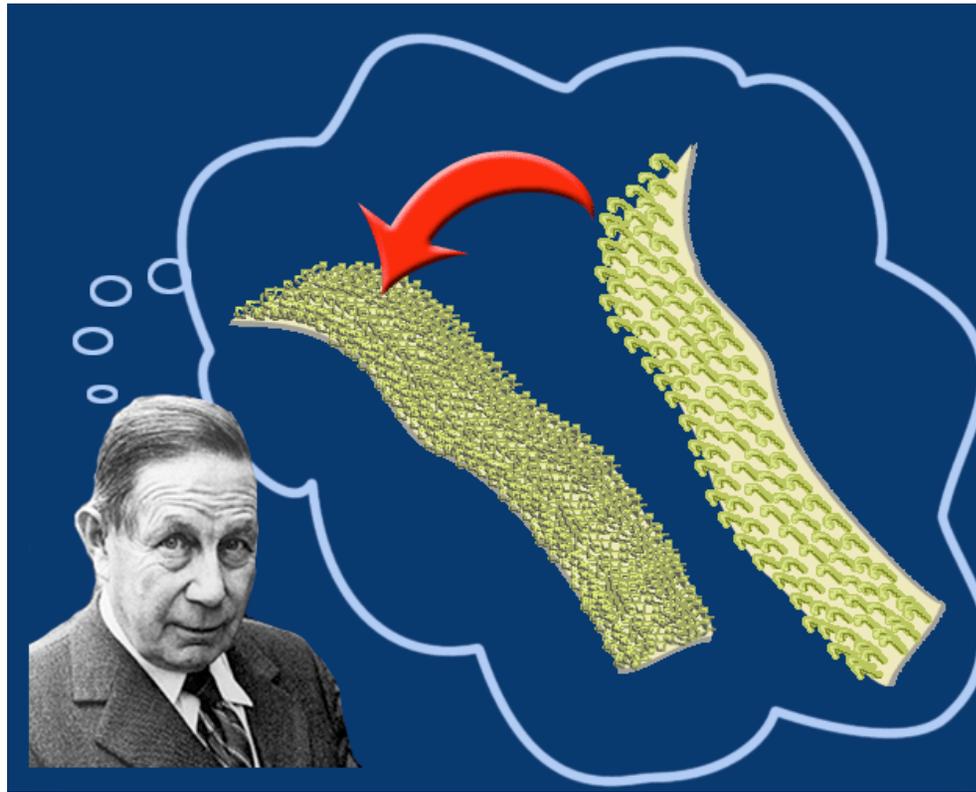
A man named *George de Mestral* lived in Switzerland. He took a vacation in the Jura mountains. One day he went hunting in the woods with his dog.



When he got home, he saw burrs stuck to his clothing and to his dog's hair. George was curious about what made the burrs stick so tightly.



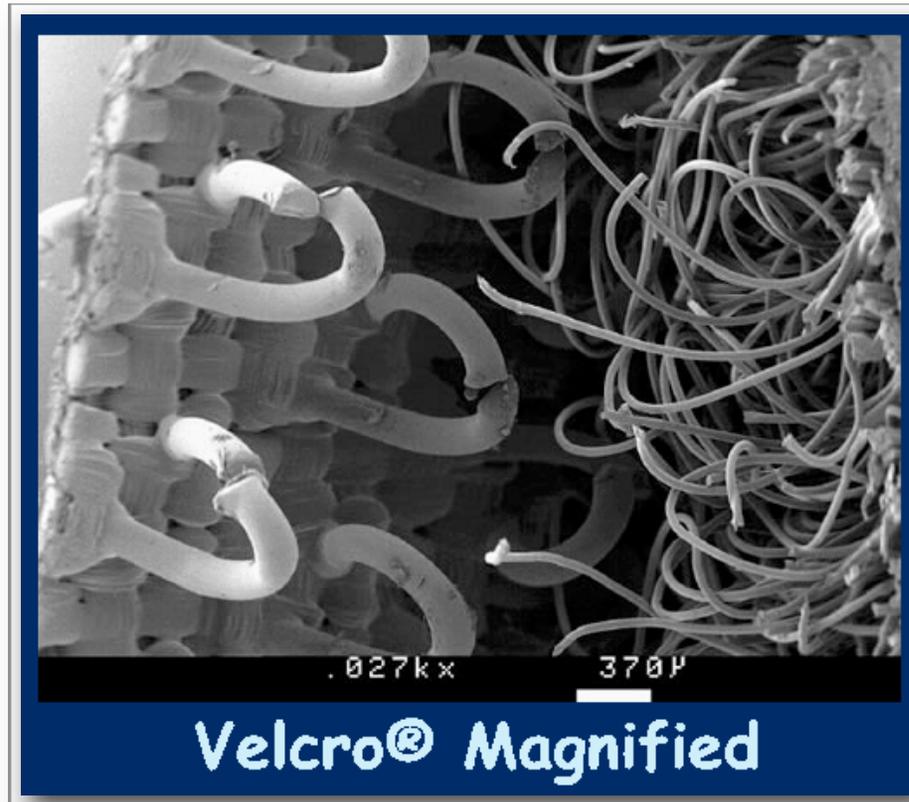
He used a microscope to see a burr up close. Each spine on the burr had a little hook at the end! These hooks could stick in the threads of his clothes and in the dog's hair.



This gave *George* an idea. He imagined making strips of little hooks and strips of looped threads for them to stick to. This would be a good way to stick things together, and still be able to pull them apart.



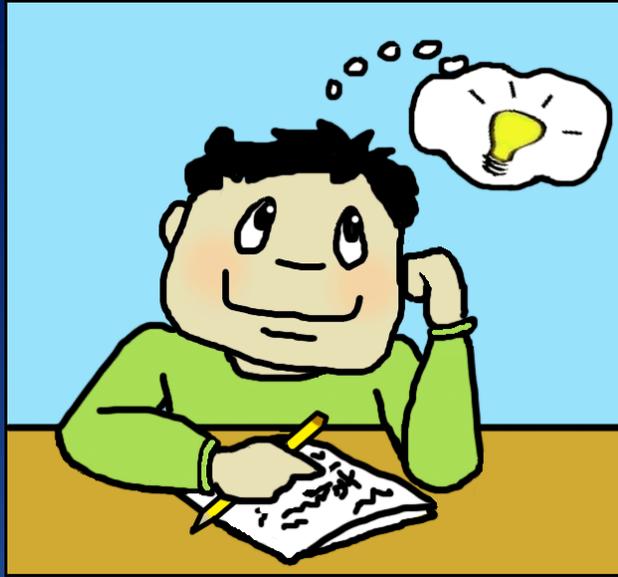
Many people laughed at George's idea. But George didn't give up. He began trying to make the strips of hooks and loops.



After many tries, he did it! He called his invention Velcro®. Today we use Velcro® to stick things up on a bulletin board, to fasten shoes, and many other ways. George de Mestral's invention was a great success!



Are you curious about how things work? Have you ever imagined something, or made up a story? Have you tried something many times, and kept on trying until you did it? Then you have what it takes to be an inventor!



THE END

THE END



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Photos by Ann Brundige. Art work is original by Ann Brundige, with the following exceptions:

1. Photo of George de Mestral by Francoise and Charles de Mestral, from an article on his death. <http://www.aps.org/publications/apsnews/200402/history.cfm>
2. Magnified velcro is a scanning EM photo by Jim Ekstrom. <http://science.exeter.edu/jekstrom/SEM/SEM.html>
3. Pizza cutter and safety pin were adapted from images from Wikimedia, <http://commons.wikimedia.org/wiki/Image:PizzaCutter.JPG> and http://upload.wikimedia.org/wikipedia/commons/thumb/4/4d/Safety_Pin.jpg/800px-Safety_Pin.jpg
4. Clip art of automobile and jet plane from Clicker 5 picture library.

I used the following references:

1. The Invention of VELCRO® - George de Mestral By Mary Bellis <http://inventors.about.com/library/weekly/aa091297.htm>
2. Brief Timeline <http://www.hookandloop.com/extra/inventionnew.html>
3. Article on various burs <http://waynesword.palomar.edu/plapr98.htm#velcro>

Note that there is some variation in the date given for George de Mestral's walk in the woods. I chose to use the one from the article on his death, which was from a professional publication. Similarly, the date of his patent varies, but in this case the confusion seems to be between the first patent, in Switzerland, and the later U. S. patent, in 1955.

Some good links for student follow-up projects are:

- http://inventors.about.com/od/famousinventors/Famous_Inventors_Nationality_or_A_Z.htm
http://inventors.about.com/od/articlesandresources/a/great_thinkers_4.htm Minority inventors