

Clever inventions that came out of the cold



Great inventors look at the ordinary and see the extraordinary. They see freshly caught fish freezing in the Arctic air, and think of a new way to preserve food. They observe a banana boat being unloaded, and get an idea for a better way to move skiers up a mountain. They look at a wheat-harvesting machine, and imagine a revolutionary way to move snow.

But inventing something is rarely as simple as getting a great idea and patenting it. Many inventors endure years of struggle and failure before they succeed. Here are some of their stories:

FROZEN FOOD

Clarence Birdseye was a college dropout working as a naturalist for the United States government in the Arctic during the 1920s. While stationed in the far north, he noticed that freshly caught fish froze quickly in the extreme cold. And when the frozen fish was thawed and cooked much later, it still tasted fresh. The quick freezing was preventing the formation of large ice crystals, and that helped to preserve the fresh flavor of the fish.

When he returned to New York, Birdseye founded his own company, Birdseye Seafoods Inc., and started packaging frozen fish fillets to sell. In 1924, he invented a new process for packing fish or vegetables in cartons, then very quickly freezing the contents between two flat, refrigerated surfaces under high pressure.

Birdseye still had to figure out a way to get the frozen food to customers before it melted. Over the next decade, he created refrigerated display cases for grocery stores and leased refrigerated boxcars to transport the frozen foods by train. The frozen-food industry was born.

C.A. Swanson & Sons began producing frozen turkey and chicken pot pies in 1951. But in 1954, the company faced a crisis. Company executive Gerald Thomas had to figure out what to do with 520,000 pounds of unsold Thanksgiving turkeys. The birds had been crisscrossing the country on 10 refrigerated boxcars. There was no warehouse space to store them.

Then Mr. Thomas remembered the compartmentalized aluminum trays then being introduced on airplanes to serve meals. Two dozen women used ice-cream scoops to fill the trays with food for the first order of 5,000. The frozen "TV dinner" featured turkey, cornbread stuffing and gravy, buttered peas, and sweet potatoes. It cost 98 cents. Swanson sold 10 million of its frozen dinners that year.

An interesting note: Since most people didn't own freezers at that time, most of the first frozen dinners were bought and cooked the same day.



ILLUSTRATIONS BY KAREN N. SCHNEIDER - STAFF

THE ZAMBONI

When Frank Zamboni opened one of southern California's first ice-skating rinks in 1940, he found he had a problem. It wasn't easy keeping the sheet of ice smooth. First, a tractor had to pull a scraper along the ice. Then, three or four workers scooped up the shavings, sprayed water over the surface, squeegeed it clean, and let the water refreeze. It could take as long as an hour.

Mr. Zamboni, who had worked on cars and built refrigerators before opening his ice-skating rink, wondered whether one machine could do all those things at once.

For almost 10 years, he tried and failed to invent such a machine. Finally, in 1949, he built his first successful ice-resurfacing vehicle.

A year later, Olympic skating star Sonja Henie's traveling ice show visited Zamboni's rink. She saw his machine in action and ordered one on the spot. He built it on the body of an Army jeep left over from World War II. Today, you can expect to find at least one Zamboni at every indoor ice-skating rink.

One machine can now shave, wash, resurface, and squeegee the ice all at the same time.

What used to take an hour and a crew of three or four now takes one worker a matter of minutes.

Zamboni's inventiveness didn't stop there. He also created a machine to suck up water from AstroTurf used in sports stadiums. Another machine of his can remove the painted lines from AstroTurf, so the same field can be used for many sports.

SNOWBLOWER

Growing up on a dairy farm in Quebec, Ontario, in Canada, Arthur Sicard saw just how inconvenient snow-covered roads could be. His family couldn't get milk to market when deep snow made the roads impassible. Snowplows were available, but was there a better way?

As a teenager, Arthur also saw a machine called a thresher being used to harvest wheat. The thresher used rotating blades. He wondered if a similar machine could clear snow from country roads. He set out to build such a contraption. To make one that worked took him three decades.

It wasn't until the winter of 1925 that Mr. Sicard developed a snowblower that worked. That year, residents of Montreal saw a strange four-wheel-drive truck rumbling through the streets of the city.

That first snowblower had three sections: the truck chassis, two adjustable chutes, and a motor to run it. In place of its front bumper were two rotating blades in a housing with a scoop in front. The driver could clear and toss snow into the back of the truck or throw it more than 90 feet away. Instead of pushing the snow aside, the way plows did, the new machine could cart it off or throw it well out of the way.

SKI LIFT

Skiing is fun. But would you climb a mountain all day just to zip right back down?

That's what early downhill skiers had to do. They would trudge up a mountain with their skis over their shoulders or on their feet. Skiers strapped pieces of seal skin to the bottom on their skis to keep from sliding backward down the mountain. (The slick fur let them slide the ski forward, but the hairs would dig into the snow when the ski moved backward, giving the skier a grip on the snow.)

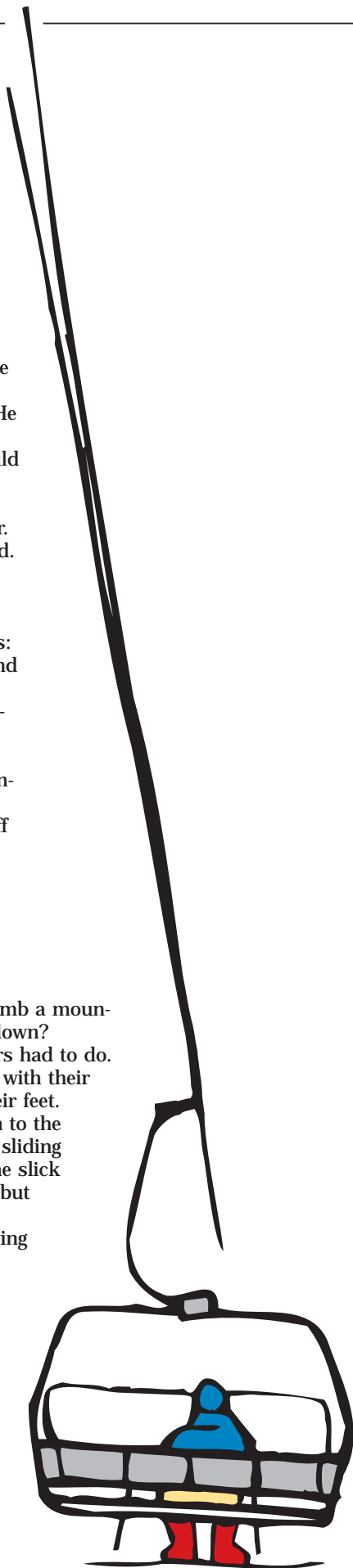
Then, in 1933, Wallace "Bunny" Bertram installed a long loop of continuously moving rope up a hill on a farm in Woodstock, Vt. The rope was powered by a Model-T Ford automobile engine. "Tow ropes" had previously been installed in Canada (1933) and Zurich, Switzerland (1932), but this was its first appearance in the United States.

Skiers grabbed onto the rope and were pulled up the mountain on their skis. It was tiring for skiers and tough on mittens, but now American skiers could enjoy many more runs down a mountain in a single day.

A few years later, the rope was replaced by an overhead cable. Now skiers could lean against a metal hook that pushed them up the mountain instead of their being pulled by a rope.

In 1936 came the first chairlift, in which skiers sat suspended in the air. (See illustration above.) An engineer named James Curran got the idea for the chairlift while looking at a cable used to unload bananas from freighter ships. The new chairlift could carry about 450 skiers an hour up a mountain.

Seth Stern



TODAY'S ARTICLE ON CHRISTIAN SCIENCE

Bringing a spiritual perspective to daily life

Insecurity disguised as humility

THERE IS A PAINTING, which I painted while in college, that was leaning against a wall in my husband's study. He said that it was one of his favorite things in the house and that he enjoyed looking at it every day. I didn't give this much thought until he mentioned that, along with some other artwork, he wanted to have the painting framed. I was amazed.

Why would anyone want to frame something that I'd painted in college? Did he actually want to hang it in the house - alongside *real* artwork?

I have always been sensitive about my talents as an artist, to the extent that I changed my major in the middle of my senior year from studio art to art history just so I would not have to exhibit my artwork. When people saw it, I would downplay their compliments and criticize my own work. I thought I was being humble.

Now, years later, I was once again agitated by the thought of people seeing my painting (the only one I still have from college). When I discussed this with my husband, he lovingly pointed out that what I considered humility was insecurity disguising itself as humility. As I thought about his comment, I realized I had been allowing doubt and lack of confidence to overshadow my joy and creativity. I believe that the source of all creativity and expression is God, and that it's important to glorify God and acknowledge Him in all we do.

In the Bible, I found some wonderful insights into this idea, such as this statement: "... unto every one of us is given grace according to the measure of the gift of Christ. Wherefore he saith, When he ascended up on high, he led captivity captive, and gave gifts unto men" (Eph. 4:7, 8).

Humility is grace expressed, praising God and being joyful in the sharing of this grace. This grace could be expressing love for a friend, being patient in a business meeting, or strategically maneuvering a boat in a regatta. All the talents we possess are from God and deserve to be shared.

Being proud of our accomplishments and acknowledging their divine source allows us to express our talent at a higher level. The founder of this newspaper, Mary Baker Eddy, wrote,

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we possess are
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"Humility is the stepping-stone to a higher recognition of Deity" ("Miscellaneous Writings," pg. 1).

By expanding my thought to see all that God has created, I am able to see more beauty, color, and form in my artwork. Since God is the creator of all, He motivates everything we do.

How can we see God's gifts as unworthy to share? Mary Baker Eddy writes, "If we feel the aspiration, humility, gratitude, and love which our words express, - this God accepts; and it is wise not to try to deceive ourselves or others, for 'there is nothing covered that shall not be revealed'" ("Science and Health with Key to the Scriptures," pg. 8). We can be more aware of and grateful for the talents that other people share.

By looking for the inspiration in other people's artwork instead of comparing it to mine, I am able to remove the tendency to criticize my own work or to feel inferior. This allows me to appreciate the idea of unlimited vision and interpretation.

My painting, which is now framed, hangs in our home in a visible spot. While looking at it, a friend commented on the lovely artwork in our home and wondered where we had gotten this particular painting. With true humility - and joy - I told her that I had done this painting. Now each expression of my creativity knows no bounds - whether it is knitting a sweater, creating a gift card, or painting a picture. I truly do glorify God as I create - and share my talents.

Let the beauty of the
Lord our God be upon us:
and establish thou the work
of our hands upon us; yea,
the work of our hands
establish thou it.

Psalms 90:17

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