

Iowa Inventors and Inventions

from
A to Z

An invention begins with someone's good idea. Sometimes those ideas happen by accident. More often, inventions result when creative people work hard to solve a problem or to make life's chores a little easier.



Air-tight Mailbag

Bags stuffed with letters were piled atop stagecoaches to travel between stage stop post offices in the 1850s.

The problem: Dust and dirt blown into the bags soiled the mail. Rain and snow leaked in, reducing letters to a soggy mess.

The solution: Charles A. Robbins and Harvey Allen designed an air-tight mailbag to protect mail from dust and water. Robbins constructed

the prototype by crimping in elastic material at the mouth of the bag. He was one of the first Iowa City residents to apply for a patent, which was granted on September 7, 1852.

Robbins's inventions didn't stop when he solved the soggy mail problem. He also patented a ditching and excavating plow for turning prairie sod.



Stagecoaches carried people and mailbags!



Basic Skills Tests

Sharpener your #2 pencil and blacken the oval of the correct answer:

Everet F. Lindquist, a professor of education at the University of Iowa, devised:

- a the Iowa Tests of Basic Skills in 1935
- b the Iowa Tests of Educational Development in 1942
- c the first electronic scoring machine
- d all of the above

The correct answer is d all of the above.

Born in Gowrie, Lindquist earned national recognition for his innovations in testing. Schools across the nation used tests he developed, sending them in by the thousands for grading. Scoring them one by one was a tedious job. Lindquist dreamed of an easier way—then invented the first electronic scoring machine in 1952, even though he had no special training in electronics.

Now, when your teacher tells you it's time for basic skills tests, you'll know whom to thank!

Corn Picker

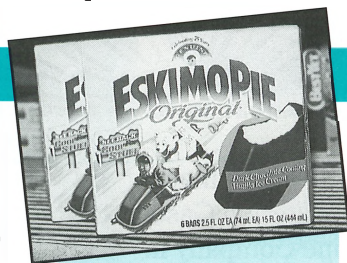


Patrick J. Lawler was a farm kid who didn't like the hard work of farming. Picking corn by hand left him exhausted. But he liked tinkering with machines and dreamed of an easier way to get the job done.

By 1880, Lawler had drawn his ideas for a corn picking machine on paper. With the help of John F. Barry, a lawyer from Chicago, Lawler built a working model of his dream. Then, on a sunny afternoon in 1885, a crowd gathered at the Lawler farm near Wall Lake to watch the strange machine pick corn. Neighbors were amazed as the horse-drawn picker poured out a stream of husked ears.

A Chicago manufacturing company offered Lawler money for the rights to produce his machine, but he and Barry wanted to manufacture the corn picker themselves. They purchased a blacksmith shop and built two machines but were unable to sell them. Lawler's first corn picker was sold for scrap in 1932.

A little boy standing in Christian Nelson's ice cream shop in Onawa in 1920 couldn't make up his mind. Should he buy ice cream or a chocolate bar?



Nelson's sweet treat has been in production for almost 80 years!

Inspired by the child's dilemma, Nelson experimented with chocolate and cocoa butter until he found just the right mixture for a coating that would freeze on a slice of ice cream. He patented his creation, originally called the "I-Scream-Bar."

Delicious Apple

Jesse Hiatt was a farmer who experimented with new varieties of apples, berries and flowers. He could do curious things like grafting several varieties of fruit on one tree. He planted a new type of red raspberries that bore fruit even in hot summer months. Then he discovered what would become the most popular apple variety in the world—by accident.

Hiatt found the unusual seedling in his orchard near Peru in Madison County. Each time he tried to chop it out, the stubborn seedling grew back. So he let it grow, later discovering qualities he liked in the fruit. Hiatt called the apple variety "Hawkeye" and entered it in a fruit show at the 1893 Missouri State Fair. When a judge bit into the apple and proclaimed it "delicious," the name stuck. A descendant of the original tree still stands just north of Peru.



Hiatt's tree in 1922

Eskimo Pie

Soon he teamed up with Russell Stover to produce what became known as the Eskimo Pie.

The Eskimo Pie became a national sensation. More than one million sold daily at the height of its popularity. Demand for the frozen treat was so strong that it helped lift cocoa- and chocolate-producing countries out of an economic depression. Not bad for a simple idea from an inventor in Onawa!

"Kids used to hang around, just to eat his failures."

—Mrs. Fred Otto, January 1955, recalling Nelson's ice cream shop.

F

Frank-A-Matic

Do you like hot dogs? Did you know that most of the frankfurters and sausages consumed around the world today are produced on a machine created by an Iowa inventor?

Ray Townsend introduced the “Frank-A-Matic” in 1964. His invention stuffed and linked 30,000 frankfurters and sausages per hour.

This machine was one of Townsend’s many innovations to boost the meat-packing industry. Born in Des Moines in 1913, Townsend is the inventor or co-inventor listed on more than 70 U.S. patents.



This Frank-A-Matic is in the SHSI (Des Moines) Collection.

Gasoline Tractor

In 1892, John Froelich built the first gasoline-powered tractor that propelled itself backward and forward. His invention helped pave the way for modern farming.

John grew up in Froelich, a Clayton County town named after his father, Henry. John ran a feed mill and elevator, and tinkered with machines. Mounting a gasoline engine on a well-drilling rig gave him the idea to mount an internal combustion engine on a tractor. A few weeks later, the tractor—a forerunner of today’s John Deere tractors—was shipped to South Dakota, where it threshed

72,000 bushels of wheat in 52 days.

Froelich, with other investors, founded the Waterloo Gasoline Traction Engine Company in 1893. This company eventually became the John Deere Tractor Works.

Like many inventors, Froelich received little recognition for his work during his lifetime while others profited from his creations.

John
Froelich



H

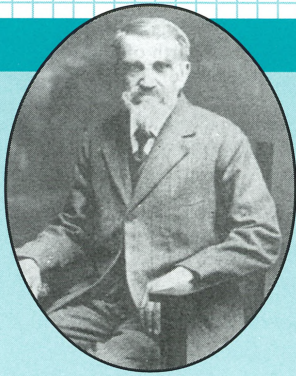
Helicopter

August Werner had a vision. He wanted to be the first person to invent a heavier-than-air craft that could actually fly—with a person in it!

In 1880, Werner and his wife, Martha (Mattie), moved to Imogene, a settlement with fewer than 200 people. Werner built and operated a boarding-house and a restaurant. He also served as the town’s furniture dealer, cabinet maker, and undertaker—occupations that often went together in the 1880s since the town cabinet maker had the skills needed to also make coffins.

But Werner lost interest in his work. He didn’t finish coffins time, the restaurant ran short of food, and he neglected orders for cabinets. Instead, his attention was focused on the small model helicopters he designed and built in his carpenter shop. Werner believed he could build a full-sized helicopter that would carry him into the air.

Driven by a wooden crank and spring that powered a propeller, the helicopter models flew up to the ceiling of his workshop. For months, Werner secretly worked on his inventions. Finally, early in 1886, he announced plans to build a full-



August Werner

sized helicopter and fly to Washington D.C. to have lunch with the president of the United States!

On July 4, 1886, Werner and a passenger, Imogene resident John Barker, got into the helicopter. As they worked the hand cranks and foot pedals, the helicopter blade began to rotate faster and faster. Finally, according to several witnesses, the machine rose about four feet off of the ground before one of the wooden cogs gave way and the helicopter crashed into a heap. Depressed and humiliated, Werner never again attempted to fly.

Although Werner's flight did not take him to see the president, it represented a great accomplishment. His four-foot flight took place **seventeen years** before the Wright brothers took their historic first flight at Kitty Hawk. Werner's vision and courage made him a pioneer in aviation.

-by Jan Wolbers



Incubator

When Rebecca Johnson's husband died, the Maxwell

woman had to support three young children on her own. Cleaning houses and sewing did not pay enough, so Johnson used her small inheritance to buy a house, eight acres of land, two cows, a few pigs, and several dozen hens. She raised chickens year-round, paying careful attention to their needs. She built a hen house that was so warm her hens laid eggs all winter. She later wrote, "I fed them cabbage, beets, turnips, squash, onions, for I knew to produce eggs in winter I would have to make conditions as near like those of the warmer months as possible.... I never let them out on cold days."

Soon she made enough money selling eggs for 18 cents per dozen to pay her living expenses and feed her animals. In the late 1800s Johnson made her first **incubator**.

Using incubators, Johnson hatched 5,000 chickens in one season. Later in her poultry career, she hatched half that amount in a single day! Eventually, she made \$300 monthly during the busy part of the year. Newspapers wrote about her skills. She received so many letters asking for advice that she wrote a book. Johnson published *How to Hatch, Brood, Feed and Prevent Chicks from Dying in the Shell* in 1906.

In 1907, Johnson received U.S. Patent No. 894,835 for an incubator alarm. The device alerted farmers to changing temperatures within the incubator. Later, she refined her invention so the thermostat raised and lowered the wick of a heat lamp.

-by Katherine House



Rebecca Johnson's poultry business (and inventiveness!) supported her family PHOTO: SHSI (DES MOINES)

incubator: a container that is kept warm for hatching eggs.



Johnston's Sewing Machine Attachments

Allen Johnston sold sewing machines to earn his way through dental apprenticeship in the 1860s. He experimented with ruffler and embroidery attachments in his spare time, creating devices that would make his sewing machines better than those sold by competitors. Seamstresses used his attachments to decorate clothing and curtains with ruffles and fancy stitching popular after the Civil War. His gadgets saved hours of tedious handstitching and earned Johnston recognition as an inventor. But it was his childhood that had prepared him for his career.

Johnston grew up on a farm in Wapello County near Blakesburg. His family didn't have money for toys, so Johnston built them himself. He fashioned sleds, ice skates, wagons, and bows and arrows from materials he found around home. When Johnston needed a baseball he wound yarn in a tight ball then used squirrel skin he tanned himself for the cover. If he didn't have the tools he needed, he made them, too.

Allen Johnston's childhood prepared him for a career as an inventor.

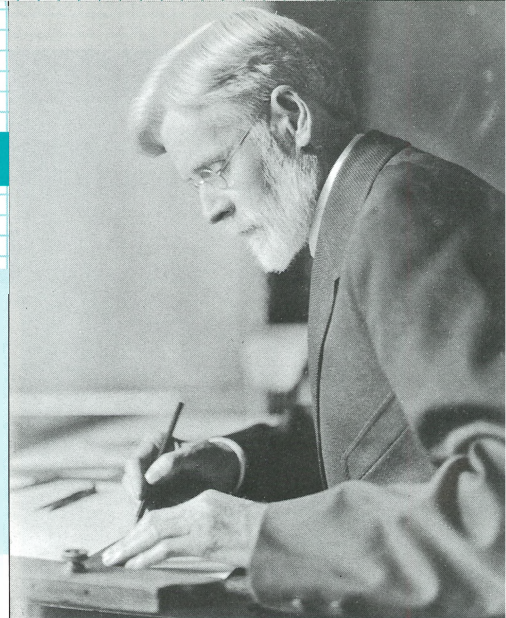
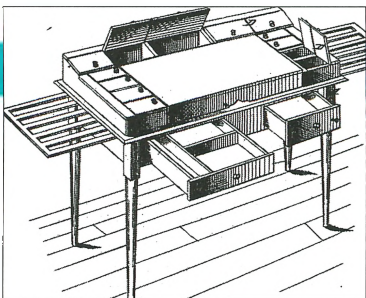


PHOTO COURTESY: WAPELLO COUNTY HISTORICAL MUSEUM

Johnston built a machine for cracking hazelnuts (hulling them by hand was slow, hard work), turned his mother's spinning wheel into a drill to bore holes in metal and wood, then adapted the spinning wheel again for use as a lathe.

"Many a night have I sat up and sewed a ball cover together so that I could take it to school the next day," Johnston wrote. It's not surprising that this child became an inventor who received 129 patents from 1870 to 1925.



Kitchen Table

Josephine Bliss of Primghar must have been a very organized woman—or at least she wanted to be! In 1878, she was granted a patent for a kitchen table that

had a series of boxes with hinged lids, a reversible molding board for shaping pastries, sliding end grates, and front storage drawers.

Bliss submitted this drawing with her patent application.

Locomotive Cow Catcher

Obstacles on railroad tracks created collision hazards for trains speeding across the countryside. James Mitchell of Osceola patented this early development in locomotive cow catchers. The device, mounted on the front of the engine, helped remove livestock or debris from the tracks without derailing the train.

