

## **COLUMBIA COUNTY INGENUITY: NINETEENTH-CENTURY PATENT AWARDS**

“Did you know that Great-Grandpa Willie was awarded a United States patent?”

“I never heard about that! For what invention?”

“For a new kind of valve for pneumatic tires.”

“No kidding! How do you know?”

This kind of conversation might become common now since patent information is more readily available than before. Recently Ancestry.com, a well-known internet genealogy service, put online all United States patents up through the year 1909. (Many early patents are available also on the website of the U.S. Patent and Trademark Office, but the Ancestry site is easier to use.) A search using names of towns in Columbia County turned up about 180 patents awarded to county residents in the nineteenth century.

The patentees came from farms and factories, from various trades and professions; their home towns covered the county from Jamison City in the far north to Centralia in the far south. Over 40% of the patents went to inventors who listed Bloomsburg as their residence, though not all of them actually lived in the town. Apparently, some named Bloomsburg because that was the place they had access to a patent lawyer to help submit their application

The following discussion focuses chiefly on Bloomsburg inventors as representative of the county. The earliest patent in the county was awarded to two Bloomsburg brothers in 1838 (see below); only a few others were awarded before the Civil War, but once industrial enterprises took hold in Bloomsburg and Berwick in the 1870s, each decade saw scores of successful patent applications in the county. A full listing of patents awarded to county residents 1838-1899 is available in the Pamphlet File at the Society library.

The patents comprise a broad range of devices and designs, from a simple clip to hold suit cuffs in place up through complicated milling machinery. The patent descriptions range from a few paragraphs for a simple device to many pages for complex devices with scores of parts. In the online file, almost all the patents include one or several pages of professionally-engraved drawings of the invention; some of these illustrations label dozens of parts of the patented device. A few of these engravings are reproduced here.

The inventors likewise represent a wide range of county citizens. As one would expect, many of the inventions relate directly to the inventor’s trade or business: a tailor’s measuring device by a tailor, an improved horse-collar by a saddler, an inking apparatus by a printer, etc. Many other designs, however, were unrelated to the inventor’s career. A farmer invented a recipe for fireproof paint, an attorney devised a whole series of improvements in fountain pens, a physician patented a quick-release grass-catcher for a lawnmower. Only two of the hundred or so inventors were women; many of the men, however, designed helpful tools or processes for use in the kitchen and elsewhere in a home. Taken as a whole, the patents show that Columbia Countians in the nineteenth century were clever, knowledgeable, determined, and in some cases notably competitive.

Several inventors patented new items for ordinary household use. One mentioned above is the simplest invention in our list: a metal clip, like an oversize paper-clip, to hold suit sleeves so they show the “proper” amount of shirt cuff. Almost as simple was a “Beef-Tenderer,” a small rolling kitchen device with teeth to tenderize meat. Another kitchen item was a more-efficient butter churn (Figure 1); it featured a rectangular box on legs to hold the cream, and a crank about waist height to turn the churn’s paddles without strain on one’s back. Another

invention useful before the era of electric lighting was an improved lamp-chimney cleaner. Still another household invention was a grass-catcher for a lawnmower, with a special arrangement so the clippings could be tipped out easily with a simple pull on a rope. A design that lasted in use for a long time was a "Spring Bed Bottom" or bedspring (Figure 2); it featured an arrangement of small springs and U-shaped clips to hold the large bed-springs in place in their frame yet leave them free to adjust to varying load weights. The basic design is still in use in some innerspring mattresses.

Many of the inventions patented by Bloomsburg residents, especially in the middle of the nineteenth century, were for tools or procedures intended to make life easier for craftsmen. These included an adjustable miter box for carpenters, a system for measuring garments for tailors, a boot pattern-maker, and a multi-blade screwdriver. Other inventions offered improved procedures or devices for industrial processes: an improved machine for polishing rice, another "for making blasting and other powders," an improved head-block for sawmills, an inking apparatus for printing presses, various molds for casting horseshoes and other iron objects.

Several of the inventors were trying to improve transportation. Their innovations included an improved horse collar, a new type of whiffletree (the swinging bar by which a horse is hitched to a wagon), a quick-release towing-hook for canal boats, and various elements of railroad operations, such as car trucks, automatic car-brakes, an improved dumping-car, and signals and junctions for tracks. There was no local invention, however, related to the new-fangled automobile.

Three patents were related to a Bloomsburg factory that produced school furniture. The patents were for an adjustable foot-rest for school-desks, a folding top for school-desks, and a hermetically-sealed inkwell.

The earliest recorded patent to a Columbia County citizen was issued in 1838 to brothers William and Charles Kahler. They were tailors, sons of German-born John Frederick Kahler, who lived in Easton, Pennsylvania, with his wife Catherine Kisselback, before moving to Bloomsburg about 1804. At the time of their patent application William was 37 years old and Charles was 24; both men were married with families. The brothers were granted a patent for a new system in the "ART OF MEASURING AND CUTTING GARMENTS." Part 1 consisted of an elastic square and self-varying square rule of their devising, together with "new and improved rules for drafting vests and pantaloons" and boys' coats. Part 2 involved a rule for cutting ladies' dresses "to accommodate the changes of fashions."

The elastic square was used to take measurements on the customer's torso following a 13-step procedure that is carefully detailed in the patent. Helpful hints include this caution: "It will be found necessary to observe how the customer naturally stands before he comes forward to be measured[,] for after charging them to *stand so* they will generally stand too straight."

The device that generated the most Columbia County patents was one of the smallest: the fountain pen. Bloomsburg attorney Paul E. Wirt devoted many years of his life to developing an ink pen which would flow smoothly from the moment it was applied to paper, yet would not leak in its owner's pocket. This challenge occupied the spare time of many ingenious people across the United States, and Wirt produced several models that outpaced the competition (Figure 3). Beginning in 1885 when he was awarded his first pen patent, he, his co-workers, and various local competitors were granted no fewer than seventeen patents for pens and attachments in the next fifteen years. Wirt established a small factory on Eighth Street in Bloomsburg and his workers turned out hundreds of thousands of pens which sold well all around the world; the factory operation continued into the 1920s. The pens made Wirt a wealthy man; he built a

substantial home along First Street on “Welsh Hill” in Bloomsburg, and made many contributions to the welfare of his fellow citizens. He is now the subject of his own website (PaulWirt.com) under the aegis of the Paul Wirt Fountain Pen Company, a commercial site selling Wirt pens and mementoes.

Competition between neighbors and even family members seems to have sparked innovation in quite a few cases in Columbia County. For instance, there was a sudden outburst of patent applications from the village of Espy beginning in 1870. On August 30<sup>th</sup> that year Joshua Faus won a patent for an “Apparatus for Saturating Fellies [wagon-wheel hubs] With Oil,” and six months later Priscus E. Bomboy was awarded a patent for an “Improvement in Apparatus for Oiling Fellies, Spokes, &c.” Then the Edgars, local lumber merchants and manufacturers, got inventive: Thomas W. Edgar received a patent on August 6, 1872 for an “Improvement in Washing-Machines” and just two weeks later his brother (or cousin) Butler Edgar won a patent for a competing design under the same title. In March of 1873 Thomas won a patent for an “Improvement in Means of Snubbing Canal-Boats” and six months later Butler, not to be outdone, patented an “Improvement in Bilge-Protectors for Vessels.” The next month Butler received yet another patent, for an “Improvement in Ear-Mufflers,” which prompted a flurry of slightly-varying designs for ear-mufflers: neighbor William Abbott’s patent in August 1876 and two more by Butler Edgar in October and November of that year. Then the village’s tinkerers turned their attention to step-ladders, with patents to Matthew C. McCollum in December 1880 and again in August 1883, to William Abbott and George Baker in September and again in October 1883, and to McCollum and two other men in 1887.

Of the two patents awarded to women in Columbia County during the nineteenth century, one went to Caroline Dorothy Halfpenny, the 37-year-old wife of a laborer with roots in the Rohrsburg area in the northern part of Columbia County, and the mother of several small children. Her husband was afflicted with a leg problem, and perhaps she hoped that her design would contribute to the family income. Her patent was for a trellis design to surround a window and provide a framework for a climbing plant such as morning-glory (Figure 4). The design provided for small trellis sections which could be linked together to fit any size of window. It isn’t known whether her design ever went into commercial production. Caroline herself lived to the ripe age of 87, dying a widow in 1935 at New Columbus, just over the county border in Luzerne County, and was buried at Rohrsburg.

Columbia County residents in the early industrial era proved to be ingenious, creative, and resourceful in developing gadgets and processes to improve daily life, whether the drudgery of household tasks in the pre-electric period or the danger of factory and mine jobs in an era of relatively-crude machinery. Many of them, of course, hoped to make a tidy fortune from commercial exploitation of their inventions, but I haven’t been able to discover any local inventors who definitely made a fortune—except for pen-maker Paul E. Wirt.

And oh, if you’ve been wondering about “Great-Grandpa Willie” and his valve to inflate tires, that was Bloomsburg machinist William H. Crossley, who received his patent for this device on September 6, 1898. Descended from one of seven Crossley brothers who came to Columbia/Montour counties in the early 1800s, William moved around frequently for various job opportunities. On the date he was awarded this patent, in fact, he was in London, England on a five-month trip on behalf of his employer, a New York corporation. In addition to the tire-valve patent, he received two patents for bicycle braking systems. Like many of the other Columbia County patent-winners, he was clever with his hands, innovative, and persistent.

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