

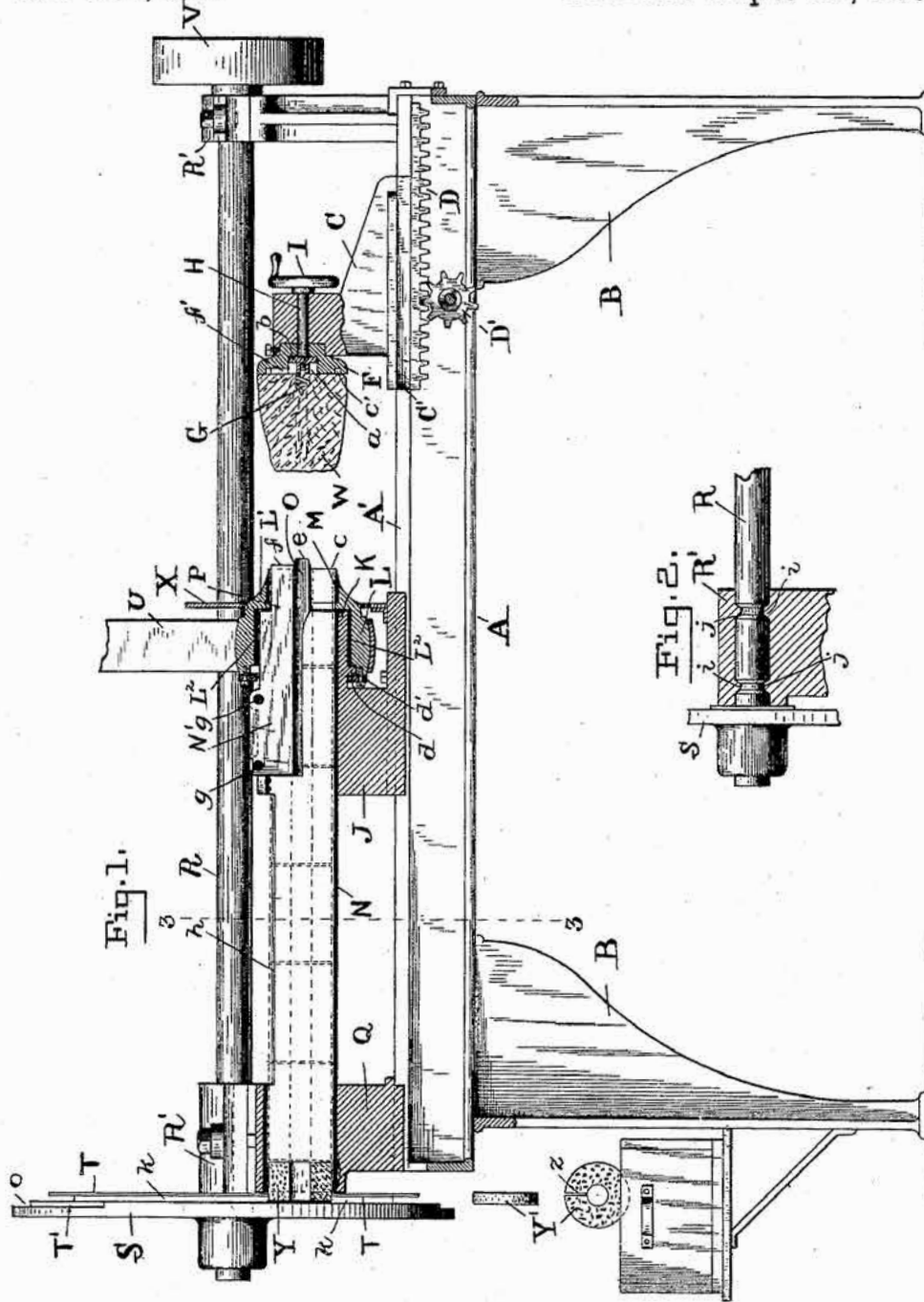
(No Model.)

2 Sheets—Sheet 1.

G. W. ZASTROW.
MACHINE FOR TREATING PINEAPPLES.

No. 482,493.

Patented Sept. 13, 1892.



WITNESSES:—
A. O. Babendreuer.
J. Parker Davis.

INVENTOR:—
George W. Zastrow,

By Chas B. Mamm
Atty

Tin Cans & Patents

By Ruth Levitt

When the 19th-century American landscape painter John Frederick Kensett was an eight-year-old boy, his father and maternal grandfather obtained a patent for their method of “preserving animal substances” in tin cans. Thomas Kensett and Ezra Daggett were among the earliest in America to develop these highly useful long-lasting provisions, and thereby to establish their names in the international annals of food preservation. Their patent also sheds interesting light on the significant value of patents as levers of social mobility to artisan families of modest means in the 19th century, such as the Kensetts.

The U.S. Patent Office placed Daggett and Kensett’s patent in Class 4, which covered “chemical processes, manufactures and compounds including medicine dying, color-making, distilling, soap and candle-making, mortars, cement, &c.” The patent granted on January 19, 1825, gave them the right to protect their canning process from unauthorized use or copying for 14 years.

The legal duration of patent protection was later extended. This longer period provided innovators and their heirs with a potentially more valuable asset, as Frederick Newbery Kensett recognized in a letter he wrote to his painter brother John in Paris in 1842. Frederick, Thomas Kensett’s third son and a legal clerk in New York City, believed the sale of this patent could raise \$7,500 (about \$218,000 today) to help the family’s rather uncertain finances. He urged John to recruit 20 to 30 English and Continental subscribers at £250 each to “dispose of our right for preserving fresh provisions.”

The growth of the Kensett family business—preserving food in tin cans—and the development of patent protection in the United States reflect both the pace of invention and innovation in the nation’s early years and the federal government’s response to it.

Patents Are a Concern In the Young Nation

Until America established its independence in the late 18th century, official power to grant patents still belonged to the British Crown. Similar protection in America could only be established by asking the relevant state or colony authorities to grant permission. Massachusetts, for example, granted a patent in 1641 for a method of making salt.

The United States Constitution of 1787 first included provision for the Congress to issue patents:

The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.

The first Patent Act, “An Act to promote the progress of useful arts,” was enacted in 1790 and enabled any two of the secretary of state, the secretary of war, and the attorney general to grant patents lasting 14 years for new inventions and innovations that were “useful and important.”

The first patent granted under the act was for a method of making potash; the application fee was \$4 (approx \$104 today). More than 4,000 patents had been granted under the act by the time Daggett and Kensett obtained their patent at the start of 1825, and during that year another 200 were added. By 1836, when a fire swept through the Patent Office, more than 10,000 patents had been issued.

The Patent Act of 1836 gave the Patent Office its own organizational status within the State Department and extended the

Potatoes, mode of preserving	Charles S. Edwards..	Rushville, Ind.	Dec. 31, 1845
Preserving animal substances	Ezra Dagget and T. Kensett	New York	Jan. 19, 1825
Preserving animal and vegetable substances	Joseph Coppinger	Beaufort, S. C.	Nov. 23, 1829
Preserving animal and vegetable substances	David Cooley	New York	Oct. 24, 1814
Preserving apples, fruits, and roots	Amos Hart	Wharton t'nship, Pa.	Aug. 10, 1829

Above: An entry in the Patent Office list of patents shows that Daggett and Kensett’s patent of January 19, 1825, granted them the right to protect their canning process from unauthorized use or copying for 14 years.

Opposite: The laborious manual preparation to peel, core, and slice pineapples continued until 1892, when George W. Zastrow invented a machine that could perform such work with greater efficiency.

duration of some patents by 7 years to 21 years in all. In 1861 the term was altered to establish a basic duration of 17 years, which prevailed until 1994, when it was changed to 20 years.

The Daggett and Kensett Families Are Joined

Why Thomas Kensett became interested in food canning in his early 30s, apart from the need to earn more money to feed his growing family, is not known. Born at Hampton Court village in England, he began an apprenticeship with an engraver in London before immigrat-

ing to America in 1802 when he was 16.

Kensett met the Daggett family in New Haven, Connecticut, some years later, moving there after working as an engraver in Philadelphia. He got to know Alfred Daggett, also an engraver, and the two young men went into partnership. Kensett married Alfred's sister Elizabeth in 1813, and they had six children between 1814 and 1822. Alfred and Elizabeth's father, Ezra Daggett, was possibly a tailor or a seed merchant in York Street, near today's Yale University Theatre and the Art Gallery.

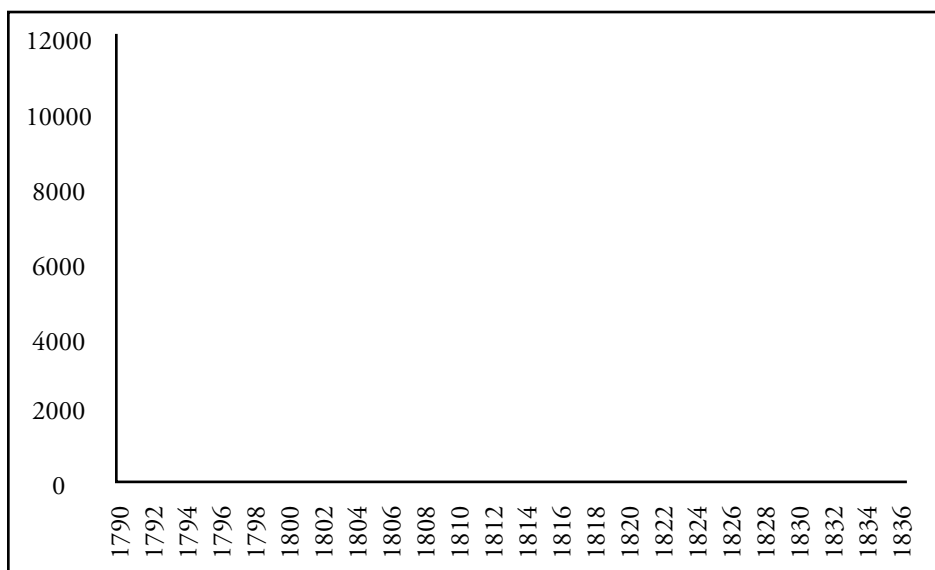
Kensett left the partnership with Alfred in 1819, probably because their engraving and publishing work was producing insufficient income for both of them and their families. Kensett began his experiments with food canning around that time. He formed a partnership, with Ezra Daggett probably helping with start-up funding. Kensett's own brother, John Robert Kensett, had arrived in New Haven in 1817 after working on a sugar plantation in Jamaica, and initially he lodged at Ezra Daggett's house. He lent Thomas money too, although subsequent disagreements about repaying the debt caused a bitter rift between them.

Food Canning Begins In France and England

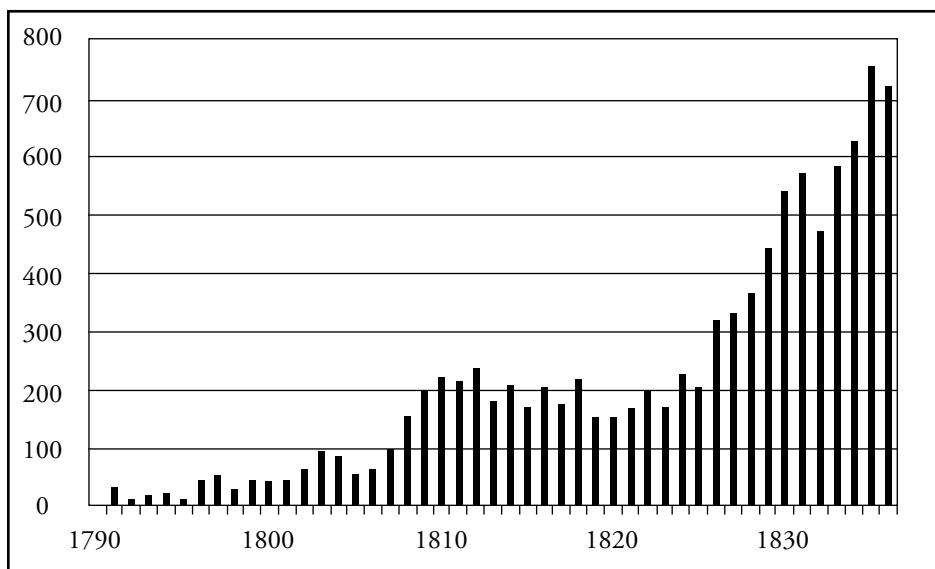
Accounts of the history of food canning in Europe and America usually start in 1810 with the work of Nicolas Appert in France and Peter Durand in England. Appert developed a method for preserving food in sealed glass containers and published his method in *L'Art de conserver les substances animales et végétales*. In the same year, Durand obtained a patent for a process that he learned from Philippe de Girard, which he published together with his own commentary: "a Method of preserving Animal Food, Vegetable Food, and other perishable Articles, a long Time from perishing or becoming useless."

Durand sold the patent to Bryan Donkin and John Hall of London; they further developed the technique of tinplating iron and sealing food in tin containers and set up a canning factory. Durand obtained a U.S. patent for his method in 1818, and an English émigré, William Underwood, probably commenced preserving food in glass containers in Boston around 1820.

By 1822 Daggett and Kensett had moved their canning business to New York City and found shop premises near the docks. They advertised in several newspapers, including the *New York Evening Post*:



By 1836 more than 10,000 patents had been issued.



U.S. Patents granted annually, 1790–1836.

PRESERVED FRESH
PROVISIONS, BY DAGGETT
& KENSETT, NEW-YORK;

Warranted for any Voyage or Climate,
In tin cases from 2lbs. to 8lbs. each.

The prices here stated are for 4lb. cases of meat, and concentrated gravies, ready cooked, and without bone. . . . The vegetable and gravy soups will be found cheaper, at the low prices here offered, than any nutritive and healthy fresh provisions can in any other way be furnished at sea. Plain directions for preparing these provisions for the table accompany each case. . . . Concentrated Soups, in 2lb. cases, calculated to make, when diluted, a gallon of rich Soup; half gravy soups, half vegetable, \$9 per dozen. Lobsters, Oysters, Clams, Fish, and the most delicate animal substances, for Sea Stores and In-land consumption, put up in order.

They bought tin and other supplies through a New York merchant, who sold the finished canned products for them to ships' captains in the U.S. Navy. They also sold canned beef, poultry, lobster, and soups to merchant navy captains, who wrote approving testimonials that the partners published between 1822 and early 1825, such as:

This is to certify that I took on board the Packet Ship Columbia, two cases of Fresh Beef and one case of Chickens, prepared by Daggett & Kensett, New York; they remained on board during our voyage to Liverpool, and back again to New-York; they were then opened in the presence of Capt. Browne and other gentlemen at the Fulton-street House and found to be fresh and good; and we have so favourable an opinion of Fresh Provisions put up as above, that we shall hereafter take them on board our ships. James Rogers Capt. of ship Columbia. Wm. Browne, late Capt. of ship James Cropper. New York Apr 17 1822.

We ate of the Chicken and Beef tak-

en to Liverpool and back to New-York and found them as sweet as any provisions we ate. [signed by 27 names]

Ezra stepped down as Kensett's partner in February 1825, just after they had obtained the patent. Thomas briefly adopted the company name Thomas Kensett & Co., but the business seems not to have prospered. By 1829, when he died, he was describing himself in trade directories as an engraver, not mentioning the canning company.

When Thomas died from consumption aged 43 in New York, his eldest son, Thomas Kensett, was 15. Over the next two decades, the son built up a dry goods business with two of his brothers-in-law in New York City, but then decided to pick up food canning where his father had left off.

The Kensetts Resume Food Canning

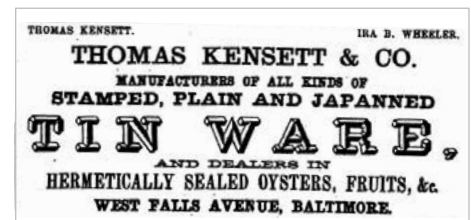
This Thomas Kensett began by selling fresh and canned foods, first briefly in New York with one of his existing partners, before establishing the firm in Baltimore by 1851. The convenience of canned foods for travelers, sailors, and troops was becoming even more relevant by the 1840s, a period of further westward exploration and settlement of territories following the Mexican American War (1846–1848) and the start of the California Gold Rush in 1848, and later during the Civil War.

In 1849 Kensett's advertisement in the California section of the *New-York Daily Tribune* claimed:

CALIFORNIANS will deeply regret if they do not provide themselves with a good supply of KENSETT & CO.'S PRESERVED MEATS. They are not equaled in the country. The choicest selection from our New-York markets, and the nicest care in their preparation, added to an experience of upward of 30 years in the business, warrant us in challenging competition. At our offices may be seen cans of different provisions put

up more than 27 years since, which we guaranty to be as sweet and nutritious as any freshly-cooked meats that can be produced.

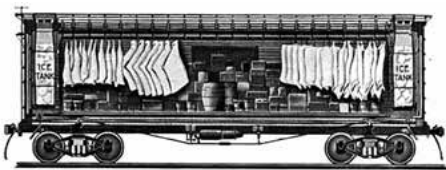
To travellers by sea and overland these articles will prove of far more value than their actual cost, as they require no preparation whatever, and may be served up at any moment. Lots of assorted meats, to suit the purchaser, are delivered to any part of the city on application to our office, 29 Old-slip. We warrant every can we preserve, and will give a written guarantee, if desired. THOMAS KENSETT & CO. 29 Old-slip, 3 doors above South-st.



Thomas Kensett was one of the early pioneers of the food canning industry in Baltimore. In 1856 he placed an advertisement in a Baltimore directory to sell tinware from the firm's can-making factory.

From his New York dockside premises, Kensett offered a growing range of provisions, including oysters and lobsters. The abundance of oysters in Chesapeake Bay was well known, and oyster harvesting had been expanding there since the early years of the century. Kensett opened a canning factory in Baltimore, the main marketplace for Chesapeake Bay oysters as well as fruit and vegetables grown in Maryland. After a brief stop at York Street in the city, he moved his operations to 122 West Falls Avenue, which became the main address of the firm until the 1880s. He relocated his wife and four young children to Baltimore in 1851, when he was 37. Both brothers-in-law joined him later. Though not the very first to do so, Kensett was an early pioneer of the food canning industry in Baltimore, which became the leading American center by the 1870s.

During those 20 years, Kensett & Co. grew and did well, canning and selling oysters, lob-



The refrigerated railroad car was patented in 1867, featuring ice stores at each end and in the car's cavity walls and floors, allowing warm air to circulate and be cooled.

sters, meats, and fruits and vegetables. By 1856, Kensett advertised in a Baltimore directory to sell tinware, a product from the firm's own can-making factory. The next year, an Australian importer was advertising "Kensett's celebrated oysters" in one- and two-pound cans in the *Melbourne Argus*. During American harvest months, the firm bought in large quantities of local produce, particularly peaches and tomatoes, for canning and also to sell wholesale as fresh produce.

Business Grows during The Civil War and Beyond

In an age before refrigerated railroad cars allowed long-distance transport of fresh produce, the Civil War created opportunities for food canners to supply provisions, mostly bought by Army officers or for Army hospitals rather than by ordinary soldiers.

Around 1865, Kensett & Co. began canning fresh pineapples imported to Baltimore from the West Indies. The laborious manual preparation to peel, core, and slice the fruit continued until 1892. That was the year that George W. Zastrow invented a machine to carry out this work with greater efficiency. He patented it and further improved it, obtaining subsequent patents in 1903 and 1905.



To learn more about

- Records of the Patent and Trademark Office, Record Group 241, go to www.archives.gov/research/guide-fed-records/groups/241.html.
- Design and patent drawings featured in a National Archives exhibit, go to www.archives.gov/exhibits/designs_for_democracy/.
- Significant patents in National Archives holdings, go to <http://todays-document.tumblr.com/search/patent>.

After the war, Kensett's business continued to grow. Writing in 1871, a Baltimore historian, Mayer, observed:

Fifteen years ago the largest houses in the trade did not pack more than two thousand bushels during the season; now many of them require from five to eight hundred bushels a day, and this, too, during a season which lasts about two months. During the season, Mr. Kensett's firm employs eight hundred hands; and to give an idea of the activity of the business, we may state that from August 9th to September 14th of the year 1870, this house packed one million thirty-seven thousand four hundred and seventy-six cans of peaches.

Thomas Kensett was elected the first president of the Baltimore Oyster Packers' Association in 1867. At the first anniversary dinner in 1868, he made a speech citing what had been achieved in less than 20 years:

The United States Government has purchased more canned goods this year than were packed in the entire State eighteen years ago. About eleven million bushels of oysters are taken annually from the Chesapeake Bay and its tributaries, of which nine millions are packed in Baltimore. There are seventy regular packing houses, employing fifteen thousand persons, and packing about fifteen million cans each year. Seventeen hundred vessels, averaging about fifty tons each, and three thousand canoes, are employed in dredging or tonging for oysters. The extensive trade in this line of goods has had the effect of bringing to Baltimore an immense amount of business in other pursuits, which never would have sought the city but for its general reputation as a packing depot.

Kensett's sons Thomas H. Kensett and John R. Kensett formally joined the board of directors of Thomas Kensett & Co. in 1870 and continued

the business with his nephew H.N. Vail. Gradually other partners joined, and the company merged with W.W. Boyer and Sons, another firm of Baltimore oyster and fruit packers, after 1890.

An English Kensett Acquires New Patents

The Kensett family's interest in manufacturing improvements extended to another branch of the family. Thomas Kensett had an English cousin, James Wittingham Kensett, who started his working life as a schoolmaster, then became a photographer and engineer for a time in England. In 1868, he moved to America with his wife, Eliza Jane, and their 15-year-old daughter.

At first, James was employed as an engineer in Troy, New York. When he was around 60 years old, he established his own firm, the Kensett Lathe Co., in Newport, Rhode Island, to develop and manufacture metallic fireproof lathing for building construction. He continued working well into his late 70s and obtained two U.S. patents. In 1901 he and his wife returned to England and lived in Bristol, close to her relations.

Kensett's metallic lathing was a new type of plastering to use on wooden surfaces inside buildings. It incorporated corrugated, heat-conducting metallic strips within the plaster, and he obtained a U.S. patent for this invention in 1876 (patent no. 181,851):

My method is applicable to any possible conformation of surface, and is intended to cover all wooden parts of buildings, including walls, floors, ceilings, roofs, window frames, doors and door frames. It is capable of any species of ornamental molding. It is especially applicable to railway-cars, grain elevators, stairways, &c., of houses, theatres, and public halls.

Ten years later, Kensett obtained another patent, this one for a protective holder for pens and pencils (patent no. 352,827). He explained its purpose in the application for the patent:

Heretofore pen-holders as well as pencils have been provided with what

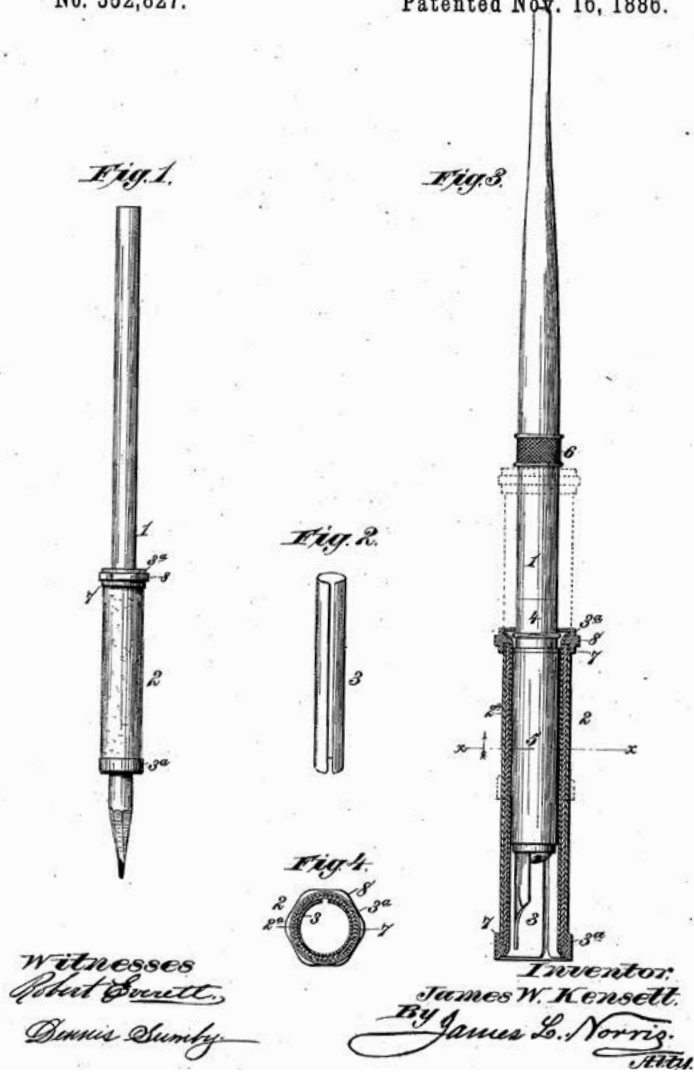
(No Model.)

J. W. KENSETT.

PROTECTIVE HOLDER FOR PENS AND PENCILS.

No. 352,827.

Patented Nov. 16, 1886.



James Wittingham Kensett patented a protective holder for pens and pencils in 1886 that was designed to not only protect the point when not in use but to prevent "writer's paralysis," allegedly caused by the fingers coming in contact with the metallic part of the pen.

are known as "anti-nervous" devices, whereby the fingers of the writer are prevented from coming into contact with the metallic stock of the pen, whereby the disease known as "writer's paralysis" may be avoided.

It is the purpose of my present invention to provide a device which shall not only accomplish the purpose first above named, but which may also be used as a shield or protection for the point of the pen or pencil, as the case may be, whereby not only is the point protected when not in use, but an extended hand-hold is given to a shortened stump.

The engraving of Kensett's pen holder is an example of the fine draughtsmanship that many patent drawings display. Applicants for patents had to include handmade drawings (and models until 1880) at their own expense, some of which were engraved and published in technical journals.

From 1853 copies of all the drawings of patents that had been granted in a year were published in the Commissioner of Patents' annual report to Congress. The Patent Office started a large program in 1871 to photolithograph and publish the drawings of all earlier patents, and specified more precise requirements for newly submitted applications.

These reproductions have greatly helped innovators, engineers, and assessors to understand what the patents offer. Patent laws have been revised periodically, widening the range of inventions and ideas and principles that could be patented. Even so, in the 19th century many trades and industries (such as brewing and clock-making) chose not to use patents to protect innovations.



The Kensetts' patents provided them with the right to stop others, for a limited period, from making, using, or selling their invention without their permission. Patents are territorial rights governed by the national or local laws. When a patent is granted, the invention becomes the property of the inventor, and like any other form of property or business asset can be bought, sold, rented, or hired. Patent ownership can be bequeathed to business partners, or, as in the Kensetts' case, to relatives, heirs, or dependents, thereby passing the benefit of the asset to subsequent generations. This enabled Thomas Kensett in the space of 50 years, through his Baltimore canning business, to secure one route to substantial upward social mobility for the family, distancing his own and subsequent generations ever further from his father's humble artisan origins and precarious financial predicament.

© 2013 by Ruth Levitt

NOTE ON SOURCES

This article draws on information from three main sources. The National Archives and Records Administration holds historic patents in Records of the Patent and Trademark Office, Record Group 241. Historic newspapers are essential for tracing business history, and *Chronicling America* (a Library of Congress project) and *Making of America* (Cornell University) include many digitized examples online. Thirdly, annual town trade directories offer important details of business activity and description.



Authors

Ruth Levitt is a Visiting Senior Research Fellow at the Institute of North American Studies, King's College, London. This article draws

on her research for her forthcoming book on the Kensetts and Britain and America in the 18th and 19th centuries.