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G. W. ZASTROW
MACHINE FOR TREATING PINEAPPLES.
No. 482,493. Patented Sept. 13, 1892.

INVENTOR—
George W. Zastrow

WITNESSES—
A. O. Babendreier
J. Parker Davis

By
Charles W. Mann
Atty.
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:

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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.
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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
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 immigrating 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*.
between 1822 and early 1825, such as:

ing testimonials that the partners published

canned beef, poultry, lobster, and soups to

captains in the U.S. Navy. They also sold

through a New York merchant, who sold the

York; they were then opened in

York; they remained on board during

prepared by Daggett & Kensett, New

Fresh Beef and one case of Chickens,

to New-York; they then opened in

In tin cases from 2lbs. to 8lbs. each.

The vegetable and gravy soups will be found

cheaper, at the low prices here offered,

than any nutritive and healthy fresh provi-

visions 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, Oys-

ters, 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 approv-
ing 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 provi-

sions 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 him-

self 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

canned foods, first briefly in New York

with one of his existing partners, before estab-

lishing the firm in Baltimore by 1851. The con-

venience of canned foods for travelers, sailors,

and troops was becoming even more relevant

by the 1840s, a period of further westward ex-

ploration 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

eualed 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 chal-

lenging 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 prepa-

ration 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 provi-

sions, 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 fac-

tory 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 in-

dustry in Baltimore, which became the lead-

ing 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.

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.

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.

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 thousand casks of peaches 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.

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
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.

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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.

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.