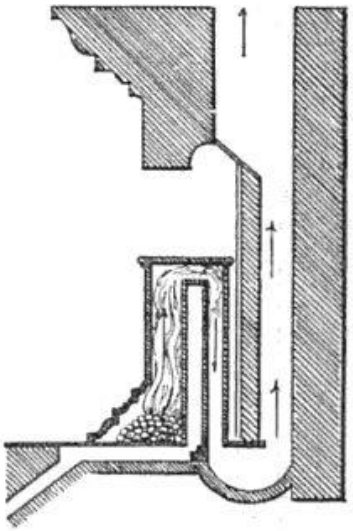
Franklin Stove
Cast Iron, c.1815-1838
Originally installed in the Fisher-Crouse House in Hanover PA
Donated in December 2024 by Billy Kress, owner of the Fisher-Crouse House

The flames in a roaring fireplace are attractive, but typically send most of the heat straight up the chimney. For many decades, efforts had been made to increase fireplace efficiency by passing hot smoke through narrow channels or “baffles” made of masonry or metal.

Around 1740 in Philadelphia, Benjamin Franklin (1706-1790) designed a refinement which he described in his 1744 pamphlet “An Account of the New Invented Pennsylvanian Fire-Places.” He famously refused to patent his idea, saying “that as we enjoy great advantages from the inventions of others, we should be glad of an opportunity to serve others by any invention of ours, and this we should do freely and generously.”

The Franklin stove, a kind of fireplace insert, sat in front of or just inside a previously existing fireplace opening. In Franklin’s design, smoke entered a series of metal channels at the bottom, in what he called an "aerial syphon" or "syphon revers'd" (an upside-down U-shaped passageway). The cast iron plates of the insert would retain heat and radiate it back into the room. His original description also included a way for cold air to enter from outside the building, and folding doors in front of the fire. Unfortunately, Franklin’s insert did not work very well, especially when first lit—the cold metal siphon and chimney did not “draw” efficiently, so smoke tended to back up into the room.



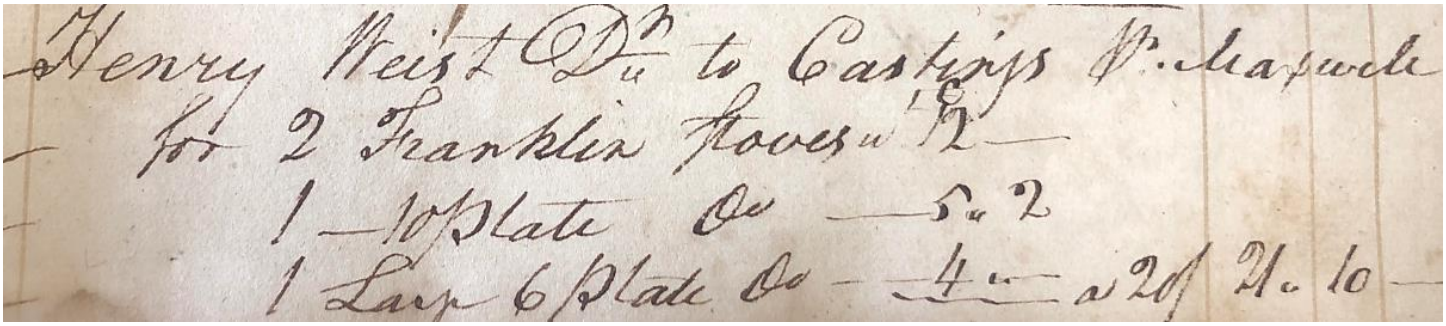
Benjamin Franklin’s original concept for a fireplace insert with a “siphon” for smoke at the bottom.

Franklin’s friend David Rittenhouse (1732-1796), another famous Philadelphia scientist and inventor, altered the design in the early 1780s. The “Rittenhouse stove” removed the baffles, allowing smoke to immediately flow upwards. Rittenhouse also angled the metal plates to attempt to radiate heat better. Though Franklin’s basic idea in the 1740s was far from new, and his design was later significantly altered by Rittenhouse and others, Franklin was so well-known that fireplace inserts were still commonly named after him two centuries later.

> *"My parlour was warmed by a fire made in one of the best constructed stoves, being an improvement of Mr. Rittenhouse on Dr. Franklin’s stove.”*
>
> Charles Wilson Peale of Philadelphia
> in *Weekly Magazine of Original Essays*, 1798

From before the American Revolution until the mid-19th century, Pine Grove Furnace and many other ironworks produced iron plates for Franklin stoves, as well as the more box-like 6-plate and 10-plate stoves. However, at Pine Grove Furnace, Franklin stoves seem to have been the least commonly made. Franklin stoves had 8 or more large iron plates, and were several hundred pounds heavier than other types of stoves.

Stove plates typically included lettering with the name of the furnace where they were made, and often the owner’s name as well. Stoves also displayed artwork—not surprising for a large object that was prominently visible in a residence all year long. The decorations cast into the iron plates could include religious references, patriotic themes, or fashionable designs from the Early Republic such as swags of leaves, floral motifs, and more abstract decorations.


Henry Weist Dr to Castings P. Maxwell
for 2 Franklin Stoves wt 12 —
1 — 10 Plate Do — 5 " 2
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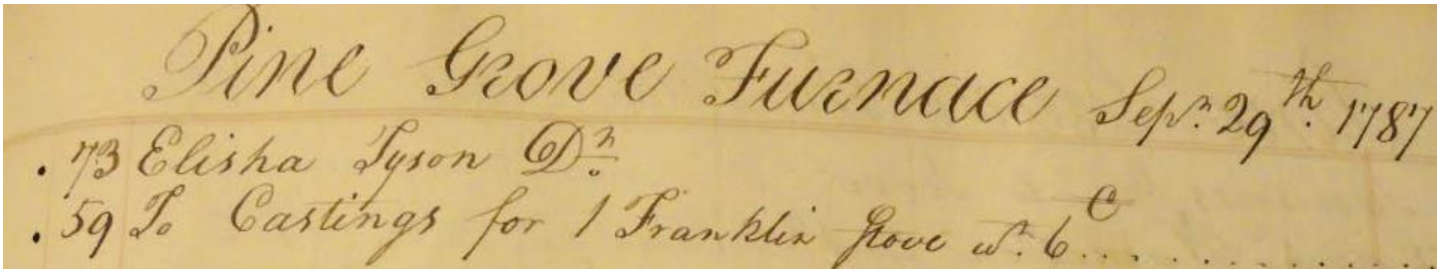
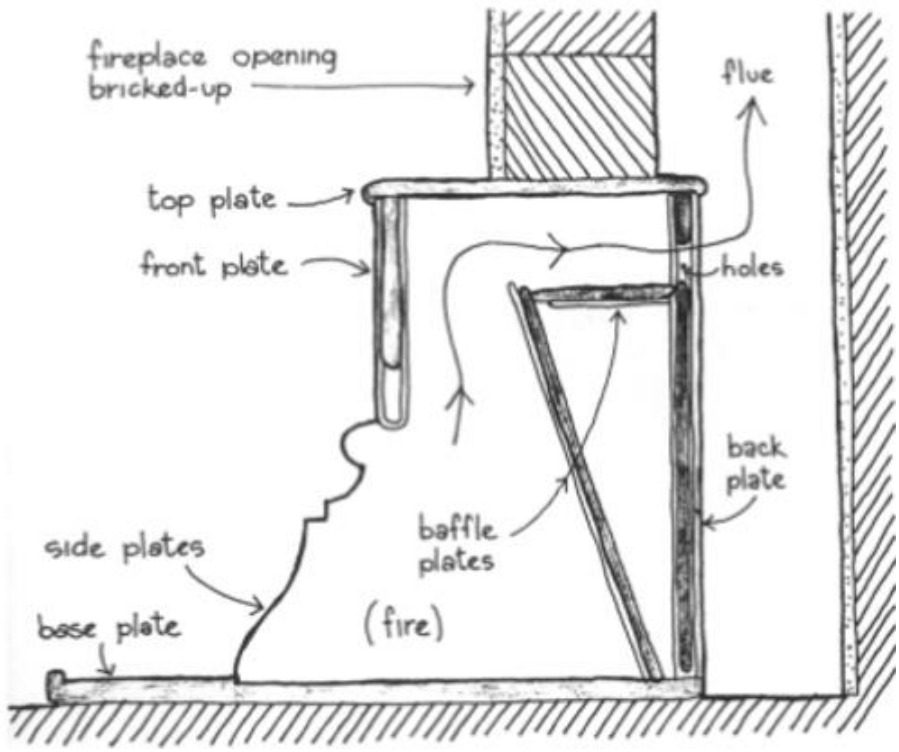
Ledger on September 27, 1785 showing Pine Grove Furnace made three types of stoves at the same time.
This business record includes two Franklin stoves, one 10-plate stove, and one large 6-plate stove. The symbol Dº next to the word plate means "ditto," so that the clerk didn't need to write the word "stove" repeatedly.


Pine Grove Furnace Sepr. 29th. 1787
. 173 Elisha Tyson Dr.
. 59 To Castings for 1 Franklin Stove wt. 6 C

Pine Grove Furnace ledger on September 29, 1787 listing "Castings for 1 Franklin Stove wt. 6 C".
The letter C with a line across it means "hundredweight." One hundredweight of iron was 112 pounds, so for a single stove in 1787, all the plates combined weighed over 670 pounds! The Franklin stove displayed in our museum weighs only 425 pounds. Made some three or four decades later, our stove perhaps uses thinner or smaller cast iron plates. Most Franklin stove designs incorporated 8 iron plates of varying sizes, plus earlier styles also had folding iron doors on front.



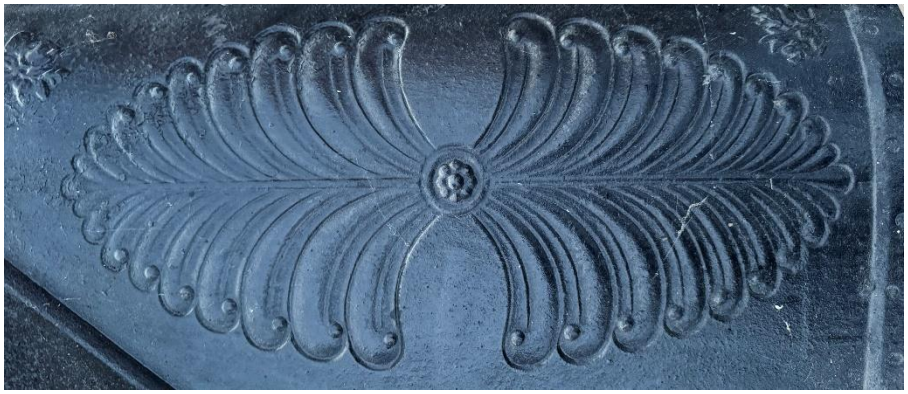
Cross section of a typical "Rittenhouse stove" fireplace insert

Note that Rittenhouse eliminated Franklin's complicated baffles and front doors, and moved the exit vent to the top of the rear plate. Also there is no entrance for fresh exterior air. The fire might be built directly on the base plate, or elevated on "andirons," basically a metal frame to allow air to enter the bottom of a mass of burning wood or coal.

Diagram from Samuel Edgerton, "Heating Stoves in Eighteenth Century Philadelphia" in the *Bulletin of the Association for Preservation Technology*, 1971.

The front of our Franklin stove reads "Peter Ege Pine Grove," suggesting it was cast between 1815 and 1838.

Peter Ege (1776-1847) had inherited Pine Grove Furnace from his father, Michael, who died in August 1815. Peter retired as ironmaster in 1835 to avoid debts, and sold the iron works to his sons Michael Peter Ege (1803-1853) and Joseph Arthur Ege (1805-1861). The sons in turn went bankrupt in 1838 in connection with the national economic downturn called the Panic of 1837. It is possible they continued to use the old wooden moulds carrying their father's name until the iron operation was sold by the county sheriff in 1838 to Judge Frederick Watts (1801-1889). Though Michael and Joseph Ege continued to manage the furnace for a few years under Watts' ownership, and Peter still lived here until shortly before his death in 1847, castings with Peter Ege's name probably date to no later than 1838.



Cast iron scrollwork and abstract leaf motif on this Franklin stove

Compare these decorations to the small 10-plate stove also exhibited in our museum. The small stove lacks Peter Ege's name, so it was probably cast before 1815 when Peter inherited Pine Grove Furnace. On the other hand our Franklin stove does show Peter's name, indicating it was made in the years between 1815 and the late 1830s.

Do you think the abstract motifs on our Franklin stove resemble those on the small 10-plate stove? Designs on the 10-plate stove are typical of the neoclassical "Adam" style, named for Scottish architect William Adam and son Robert. "Adamesque" furnishings were popular in this country in the 18th to early 19th century. "The ovoid form blended well with Federal and Greek revival taste, and the design became increasingly popular in the early 19th century." (Edgerton 1971).

Top two photos: this Franklin stove in its original location in the Fisher-Crouse house in 2019, before renovations by the current homeowner. Note the andiron frame to hold burning logs off the bottom plate for air circulation. **Bottom photo:** the Fisher-Crouse house, built around 1760, is the oldest remaining house in Hanover PA. Photos on this page are from a realtor website, *theoldhouselife.com*.

Franklin Stove at the Cumberland County Historical Society, Carlisle PA

A nearly identical iron artifact is in the museum of the Cumberland County Historical Society. It appears to have been cast using the same wooden moulds as the Franklin stove now at Pine Grove Furnace.

Unlike the artifact displayed by the Historical Society, our example lacks the two brass urns at the front corners. The "finial" decorations would have been added by a stove dealer, not here at the furnace. These extra parts, popular in the early 19th century, covered the tops of vertical iron rods holding the plates together. We don't know why they were not included with this stove from Hanover. Was it a stylistic choice, or to save money? Or could they have been installed in the past, but later removed during its two centuries in the Fisher-Crouse house?

Can we tell which stove was cast before the other? Over time as multiple castings were made, wooden moulds wore out and small features became less distinct. One example is the lettering. In Carlisle, the letters stick out more—so perhaps it was cast earlier than the stove in our museum. However, this clue is inconsistent: note that the G and second E in "Ege" are less "sharp" on the Carlisle stove compared to the one here. Meanwhile for "Grove" the Carlisle stove shows a less distinct letter R. Also, the O is different. Some differences might reflect stray grains of sand stuck in the hollow created when the mould was removed to allow molten iron to flow in. Or, perhaps letters were painstakingly replaced so that worn-out moulds could still be used. Another possible complication is varying thickness of the coating of "stove black," a mixture of wax and carbon to protect the iron. What do you think?

Top: Franklin stove here at Pine Grove Furnace. Bottom: very similar stove in Carlisle.