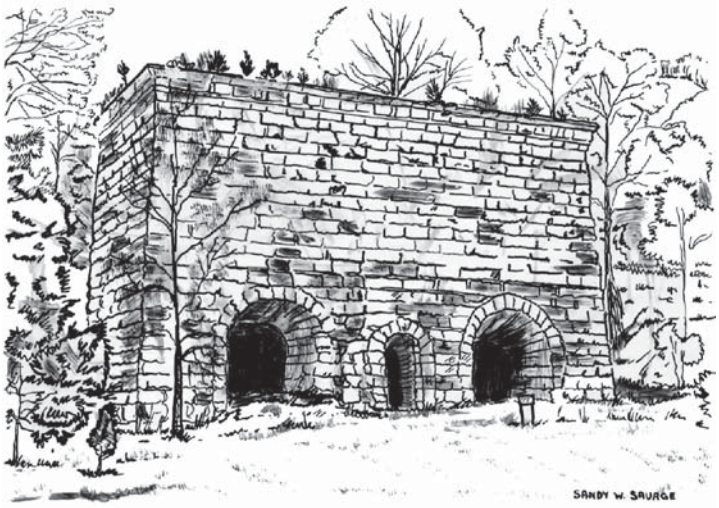
FITCHBURG FURNACE:

the Story in Pictures and Text



ONE OF THE NATION'S MOST-PRIZED HISTORICAL RELICS

The Fitchburg Furnace is the world's largest charcoal iron furnace and the last to be built in Kentucky. Fred Fitch designed it and Sam Worthley, stone mason from Scotland completed construction in 1869. The Furnace had a rated Iron capacity of 10,000 tons per annum-as big as any furnace in the U.S. up to 1872.

Known as the Red River Furnace this structure incorporates the latest design technology and is state of the art. The twin stacks, named Chandler and Blackstone respectively, were built of sandstone using traditional dry laid stone masonry. The massive structure stands 81 feet long, 40 feet wide, 60 feet high. A number of innovative features first used in this furnace were later taken up by modern furnaces of today. One such feature new to charcoal iron furnaces but subsequently installed in all modern furnaces was the use of a bustle pipe. This is a refractory lined pipe contained in an underground duct that encircles each furnace about the mantle level. The function of the bustle pipe is to evenly distribute the air blast to each of the four tuyeres connections of each furnace. Another feature new to charcoal blast furnace practice was the use of a closed top, designed to contain the hot gases when charging the raw materials to the furnace. This is in the form of a bell and hopper design, an inverted bell shape cap that is suspended inside the shaft of the furnace. More complex versions of this principal are in use today.

Skip Johnson
Friends of the Fitchburg Furnace

Acknowledgements

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Dr. Thomas Clark's Kentucky Treasures
A History of the Fitchburg Furnace, by Don Fig
The Case of the Red River Iron Manufacturing Company Furnace,
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Introduction

Beginning in 2001, a group of concerned persons associated with Aldersgate Camp and Retreat Center, the land owner surrounding the 1.96 acre Federal Furnace property, started discussing the deteriorating condition of the Fitchburg Furnace. Quickly interest grew resulting in the forming of the Estill Co. based incorporated group today known as the Friends of the Fitchburg Furnace.

During the next 9 years the Friends worked with the Estill County Judge, National Forest Service and others to find funds for the project. Senator Jim Bunning provided the majority of the monies needed. Engineers from Germany to Pennsylvania to Kentucky were utilized to determine what to do to stabilize this historic structure. Contracts were let, and work was conducted in phases to stabilize and protect the furnace for future generations. Stone from the original quarry, located off Watson Ridge, and left by the original workers was used to replace missing and damaged stone in the façade and interior of the furnace.

Research conducted yielded new information about the construction and operation of the Fitchburg Furnace and its national significance. Historic artifacts found on the site were also secured and tagged by archeologists and will be eventually placed on permanent display.

While much was learned in this process, there is so much more we don't know. The Fitchburg Furnace is an amazing marvel of 19th century technology, engineering and architecture. Our understanding of the furnace, the community and the people changes with every new discovery. Even folklore of the furnace seems to change. This newly found picture provided by Buddy Joe Smyth, circa 1935, shows the dynamite damage in front already exists – clearly before the tale of the moonshiner blowing it up in 1947!

We may never know the full story of the Fitchburg Furnace, but we hope this book helps to give you a glimpse. Enjoy!

Lee Padgett,
Chairperson, Friends of the Fitchburg Furnace, Inc.

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FITCHBURG IRON FURNACE

reprinted from
Dr. Clark's book
Kentucky Treasures

This towering piece of industrial history in Estill County offers a lesson in what might have been for Kentucky.

The state became an early center of iron production because it was blessed with ample supplies of iron ore, limestone and wood for charcoal to fuel iron furnaces. For a while in the 18oo's, Kentucky was the nation's third-largest iron producer, trailing only Pennsylvania and New York. Fitchburg Furnace, built in 1868 by brothers Frank and Fred Fitch, took things to a new level. At the time, most iron furnaces in Kentucky were small, primitive affairs: Small crews of workmen could produce a few tons of iron in a day.

In contrast, Fitchburg was considered the largest stone furnace in the world when it opened. It was two furnaces in one, 60 feet tall and 115 feet long. It used the best technology available at the time, employing blasts of superheated air to remove impurities from the iron it produced.

The Fitch brothers planned to produce iron on a huge scale, operating 24 hours a day and turning out 10,000 tons of iron a year. The

The view straight up from inside the furnace shows that nature is moving in. Iron made here in the 1870s was used for rail and railroad car wheels.

The Fitchburg Furnace, reminiscent of a medieval castle, was one of the world's most modern iron furnaces when it was built in 1868.

ABOVE; Brothers Frank and Fred Fitch hoped to build an iron empire at Fitchburg, but the furnace was forced to close after only four years when a financial panic gripped the nation beginning in 1873. Afterward, iron production moved elsewhere.

furnace created more than 1,000 jobs. An entire town of 2,000 people — named Fitchburg, after the brothers — grew up around it, with homes, churches, a hotel and a post office.

Unfortunately, the timing was wrong. Richer iron ore was discovered in other parts of the country; better furnace technology became available; and a financial panic forced the Fitchburg furnace to close in 1874. Iron production shifted to other states, including Pennsylvania and Alabama, and was taken over by huge corporations. Kentucky's chance to become an iron-industry giant faded.

The town of Fitchburg is gone, but the furnace still stands. The furnace is now a national historic site and is being restored with a $670,000 federal grant. Architectural and engineering experts from Germany are advising on the project, which will preserve the furnace as a reminder of what might have been.

Kentucky was poised to become a giant of the iron industry, but the timing was wrong, and the opportunity faded away.

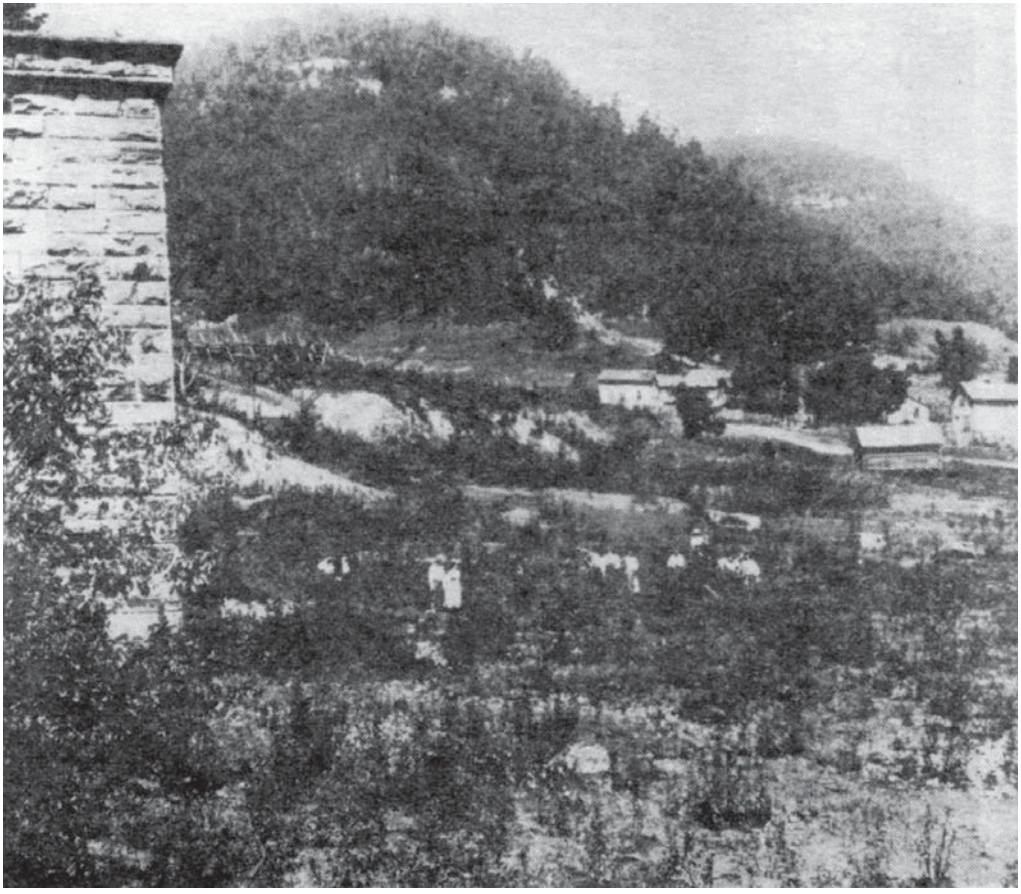
ABOVE; The town of Fitchburg, which grew up around the furnace, has long since disappeared. Once, more than 2,000 people lived here, and most of them worked at the furnace. Now, only the stone furnace remains.

A History Of The Fitchburg Furnace

By Don F. Fig

Forward

Cottage Furnace.
Observe crude stone structure when compared with Fitchburg Furnace.



Note Cobb and Thacker Mountains in background where the iron ore was mined.

Like a monument to a bygone age Fitchburg Furnace stands in towering splendor. Long shrouded in obscurity, the old furnace may once again become a center of activity as one of the nation's most prized and historical relics.

Due to the scarcity of written records, the history of this great stone structure is dim. The following history is based on years of research and numerous interviews. It is recognized that some inaccuracy may be present; but, even so, there is no doubt about the historical significance of this sandstone work of masonry and its right to preservation for the benefit of modern-day and future citizens.

The U.S. Forest Service acquired the Fitchburg Furnace on April 6, 1973, as a donation from Joyce Russell Broaddus and Toska R. Middleton, both of Louisville, Kentucky. Thanks to their generosity, thousands of Americans will be able to view this immense, double furnace, and be reminded of an almost-forgotten chapter in Kentucky history. On April 17, 1974, the Fitchburg Furnace was designated a National Historic Site.

This insures the structure will be preserved for future generations of Americans, while standing like a giant cenotaph to the memory of Charles W. Russell, last superintendent of the Fitchburg Ironworks.

Iron is one of the most widely used of all metals. The history of its use is lost in the realms of antiquity, as the use of iron long antedates all written records. Due to its tendency to rust and thus lose its original form, there is very little evidence of its use in ancient times. Modern archeology, however, divides the periods in the early history of the human race into The Stone, The Bronze, and The Iron Eras. Indeed, from the very beginning of historic times, iron has been an important metal to mankind.

There are few records of ironmaking in Europe during early centuries of the Christian Era. However, during the sixteenth century slag heaps overgrown with vegetation were discovered in Norway, France, and Sweden. Examination of these heaps revealed them to be about six centuries old, thus, indicating that the mining and working of iron must have been practiced extensively at an early time.

The first ironworks in the United States were erected at Falling Creek, Virginia, in 1619, by the Virginia Company. Earlier, after the successful establishment of a colony at Jamestown by the London Company, Sir Thomas Gates stated there were diverse minerals, especially iron ore in the new country. Samples sent to England were found to yield iron as good as any in the world. Subsequently, about forty men all famed to ironworks were sent to the colony to establish the first iron industry. Indian troubles and internal conflicts within the Virginia Company caused the foundry to be closed about 1624.

In 1643 John Wenthrop, Jr., and ten other Englishmen formed the "Company of Undertakers for the Ironworks" and established the first successful ironworks near Flynn, Massachusetts, on the Saugus River. The furnace remains standing today as the restored "Birthplace of America's Iron and Steel Industry."

The first successful iron industry in the south didn't develop until 1714, when Governor Spottswood established furnaces in Spottsylvania County near the Rappahannock River.

Iron making in the State of Kentucky dates back to March, 1791, when a German named Jacob Myers began to erect a furnace on Slate Creek, near Owingsville, Kentucky. Myers, on May 24, 1791, "for and in consideration of the sum of one thousand four hundred and twenty-six pounds and eight shillings and a six pence current money of Virginia," conveyed to John Cockey Owings of Baltimore, Maryland, and a one-half; to Walter Beall of Nelson County, a one-eighth; and to Willis Green of Lincoln County, a one-eighth interest in the land, retaining a one-fourth interest for himself.