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Benjamin Rittenhou

and His Apprentices and Partners

Early American clockmakers and makers of mathematical instruments often employed apprentices whom they trained in their crafts. Few of them are identified, however. An exception occurs in the shop of Benjamin Rittenhouse, four of whose apprentices are known and two of whom he made his partners. Generally an apprentice was taken on at the age of about fourteen and trained for seven years. When he had reached the age of twenty-one, it was expected that he had mastered his craft. Often the former apprentice continued to be employed by his former master as a journeyman for a year or two at the request of the master, or he traveled elsewhere to seek work.

Over the course of time, Benjamin Rittenhouse maintained an extremely busy workshop producing clocks and surveying

instruments for many years, first in Norriton then in Philadelphia. He appears to have made a practice of employing apprentices, and the names of two of them subsequently appeared as partners together with Benjamin Rittenhouse's name in the inscriptions upon instruments. Until recently both have been erroneously associated by the present writer and others as partners with Benjamin's brother, David Rittenhouse. In the course of his career Benjamin Rittenhouse hired and employed at least four apprentices, the names of whom are known and each of whom became clockmakers and makers of mathematical instruments in his own right.

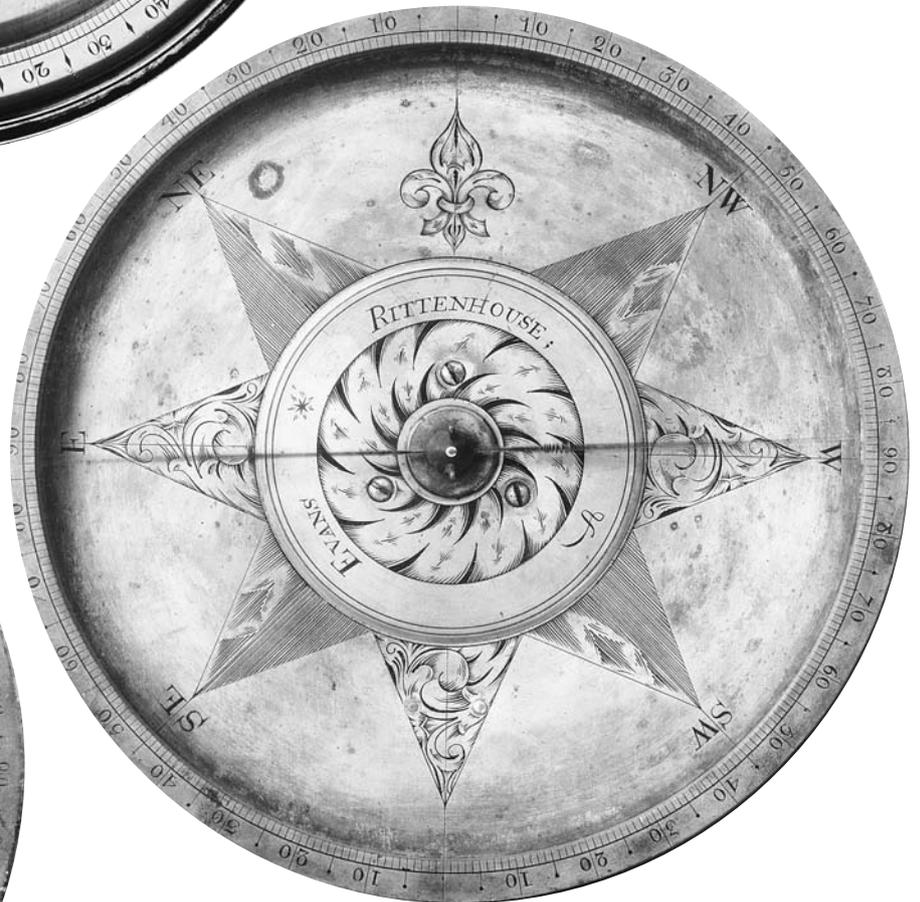


>> By Silvio A. Bedini



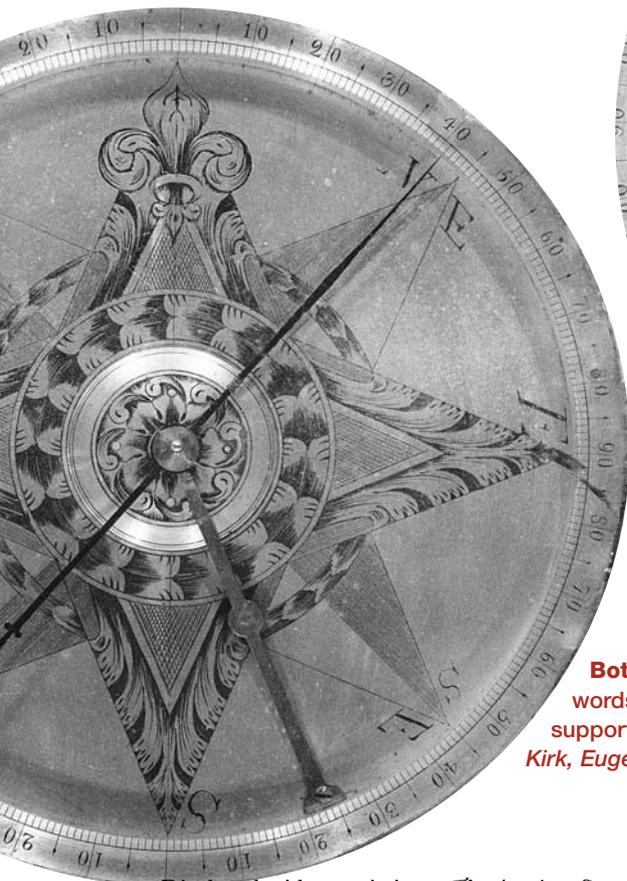
Top: Dial of vernier compass inscribed *Rittenhouse and Potts*. Courtesy of the *Henry Francis DuPont Winterthur Museum*.

Middle: Dial of compass inscribed *Rittenhouse & Evans*. Courtesy of the *National Museum of History and Technology, Smithsonian Institution*.



Bottom: Dial of compass made by Lewis Michael. The words *Lewis Michael Fecit* are engraved on the base that supports the sight vanes (not shown). Courtesy of *Mr. Gary Kirk, Eugene, Oregon*.

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Benjamin Rittenhouse (1740-1825), clockmaker and maker of mathematical instruments, had always lived in the shadow of his older and more famous brother, David Rittenhouse. Benjamin spent his early years working with his father, Matthias Rittenhouse, on the family farm in Norriton Township, Pennsylvania. David became a talented self-educated clock and instrument maker and astronomer. He trained his younger brother in the same arts and for a time they worked together in Norriton. In 1770, when Benjamin was married, he and his wife shared the home of his father in Worcester Township. After his wife died, Benjamin married again and in time the offspring of both his marriages was six children. Benjamin subsequently became actively engaged as an independent clockmaker and several of the clocks he made bearing the place name of Norriton have survived.

When in 1776, with the beginning of the American Revolution, the Pennsylvania Council of Safety determined that it required an uninterrupted supply of arms, Benjamin Rittenhouse was appointed to organize and operate a factory to mass produce gun locks. He relocated with his family to Philadelphia for this purpose, but soon finding his salary to be inadequate to the higher cost of living, he asked for a raise in salary in April. At the time that the British were about to occupy the city, the gun lock factory was relocated, and Rittenhouse continued to serve as its superintendent until it was disbanded in 1779. At that time he petitioned to purchase some of the factory tools to use in his own work. Benjamin returned to Worcester Township in the same year and resumed his clock and instrument business.

Lewis Michael

It was probably at about this time, in 1779, that Benjamin Rittenhouse hired an apprentice, the earliest one of whom there is record. He was named Lewis Michael, and probably was born in 1765. His name first appeared in the tax records of Worcester Township in 1786 when he reached the age of twenty-one, and two years later, a revealing advertisement in the *Pennsylvania Chronicle* or *The York Weekly Advertiser* for April 2, 1788 indicated that Michael presumably had completed his apprenticeship and was now self-employed and had established himself with his own shop in York,

Figure 1

TO LAND SURVEYORS And Others: THAT the subscriber has set up his trade in Yorktown, the south-side of High-street, two doors above the Court-house, where he makes and repairs all kinds of compasses, with or without a nonius to lay off the variation on an old line to five minutes of a degree, he will (if required) out on an outbox so that the surveyor can keep his own outs in the field, and in such a manner that if he chooses to keep it secret none can tell its use. He makes parallel rules, scales, protractors, surveyors chains, clocks, etc., etc. he will warrant all his work to stand the most critical examination that possibly any practical surveyor or mathematician can put them to, and perform to the greatest nicety, and minute accuracy. He has some compasses ready made all which he will warrant, and dispose of on the most reasonable terms.

LEWIS MICHAEL

Instrument maker.

Attached to the advertisement was an endorsement of his instruments by John Forsyth, deputy surveyor:

I have proven by several severe trials the compasses above mentioned and find each of them stand proof to the greatest exactness, both with respect to the correctness of the workmanship and being free from mineral attraction.

JOHN FORSYTH, Dep. Sur.

March 12, 1788.

Pennsylvania as a maker of mathematical instruments (**Figure 1**).

Michael's career can be traced to some degree from a series of ten land deeds in the York, Pennsylvania County Court

that reflect his changing domiciles and occupations between 1791 and 1800.

Two deeds filed in April 18, 1791 and April 23, 1791 listed him as a "clockmaker," while another deed filed five days later on April 28th identified him as an

Figure 2

LEWIS MICHAEL has lately arrived from Pennsylvania with a few first-rate surveyors Compasses on Rittenhouse's improved Models. Amongst them is one common Circumferenter, & a few that lay off the variations to five minutes of a degree without boxes to keep the outs in the field. They are of the first rate workmanship and will be warranted to prove correct. The said Lewis Michael having obtained the knowledge of the late Benjamin Rittenhouse of Philadelphia, and has practised the business for forty years. The above compasses are offered for sale at the shop of E. P. Pratt, Watch and Clockmaker, where they can be had at modest prices.

Lewis Michael

Chillicothe, Ohio, November 7, 1832.

“instrument maker.” One filed in June 1793 did not list his occupation. Two deeds filed in York Borough on July 13, 1796 identified Michael as a “merchant” in York Borough, and yet other of the same date indicated that he was now living in Hanover Borough, York County. One deed dated July 21, 1800 listed him as a merchant in Hanover, and another filed the same day specified that he was a merchant in Baltimore.

Sometime during the year 1832 Michael moved from Pennsylvania and established himself in Chillicothe, Ohio, according to an advertisement that appeared in the November 7, 1832 and the November 14, 1832 issues of the *Scioto Gazette*, that city’s newspaper. The advertisement also implied, although it did not confirm, that he had been trained as a maker of surveying instruments by Benjamin Rittenhouse and that the compasses he was offering for sale were improved models of Rittenhouse instruments. (Figure 2)

William Potts

The Federal Land Ordinance of 1785 brought about a renewed demand for surveying compasses, specifying that the vernier surveying compass was favored so that Benjamin Rittenhouse turned once more to making them. He returned to Worcester Township from Philadelphia and once again advertised for an apprentice in the May 14, 1785 issue of the *Pennsylvania Packet* shortly before Michael had completed his apprenticeship. He may have left his employment by this time. (Figure 3)

The very year that he advertised, Rittenhouse hired William Lukens Potts (1771-1854) the son of the millwright Thomas Potts, who had served in the Provincial Assembly just prior to his death in 1776. William was born on July 17, 1771 and had turned fourteen in 1785. It is believed that he may have served an apprenticeship for a time with his cousin David Shoemaker before Rittenhouse subsequently took Potts as his partner. In 1796, when he was twenty-five, he was working in Rittenhouse’s clock shop in Worcester Township in Montgomery County, and it is said that he remained with Rittenhouse for two years during which they produced compasses inscribed with the name “*Rittenhouse & Potts*,” several of which have survived. Potts subsequently left Montgomery County and was recorded to be working in Pitts Town, New Jersey. There he advertised on

Figure 3

WANTED

An ingenious lad not exceeding 14 years of age, of a reputable family, to learn the art and mystery of making clocks and surveying instruments. Any lad inclined to go an apprentice in the above trade, the terms on which he will be taken may be known by enquiring of Mr. David Rittenhouse, in Philadelphia, or at the subscriber’s house in Worcester, Montgomery County,

BENJAMIN RITTENHOUSE.

January 17, 1800 in *Claypoole’s Daily Advertiser*. (Figure 4)

Barnhill was a Philadelphia storekeeper and brother-in-law of Potts. In 1807 Potts moved to Nockamixon Township in Bucks County where he practised the trades of clockmaker, instrument maker and silversmith until 1816. In that year he moved to Philadelphia to become an iron merchant. He died on January 17, 1854. A compass in the Gurley collection is signed with only the name of Potts. Compasses inscribed “*Rittenhouse & Potts*” are in the collections of the American Philosophical Society, the Francis DuPont Museum at Winterthur, and one is privately owned in Waterloo, Illinois.

Benjamin Evans

After Potts left the Rittenhouse shop and moved away from Worcester Township, Benjamin Rittenhouse next hired his own nephew, Benjamin Evans, who had just achieved the age of fourteen. Benjamin Evans (1776-1836) was the son of David and Benjamin Rittenhouse’s sister, Eleanor Rittenhouse, who had married the Philadelphia blacksmith Daniel Evans. When young Benjamin Evans was six years of age, his family had relocated to David Rittenhouse’s farm in Norriton. Benjamin Rittenhouse was then living in the adjoining Worcester Township. In 1790 Benjamin Evans became an apprentice of his uncle Benjamin, who trained him as a

clock and instrument maker. It was during this period that Benjamin Rittenhouse appeared to be concentrating on the production of surveying instruments. Evans completed his apprenticeship in 1797; the next year he became a journeyman clockmaker and his uncle took him as a partner in the clock shop. Instruments produced in this period bore the signature “*Rittenhouse & Evans*.” Instruments with these signatures are in the collection of the Smithsonian Institution and the Historical Society of Pennsylvania.

David Rittenhouse

In 1801 Evans moved from Worcester Township and married Jane Brown soon thereafter. The Federal Census notes that from 1810 to 1820 he was living in Northumberland County. Through his wife he inherited a farm in Tredyffrin Township in Chester County, where he died on September 25, 1836.

In 1800 Benjamin Rittenhouse took on as an apprentice his own son named David Rittenhouse (1776-) who had been named for his uncle. Nothing is known of young David’s early career except that he was listed in the city directory as a clerk in the Register’s Office in Philadelphia. In 1800 at the age of twenty-one he returned to Worcester Township to work in his father’s shop. In April 1801 he married. One instrument signed “*Rittenhouse and Comp*” which was said to have been owned and used by

Figure 4

SURVEYING INSTRUMENTS OF ALL KINDS AND RITTENHOUSE CIRCUMFERENTERS

With Each A Nounes and Spirit Level Compleat—Made and Sold by Wm. L. Potts, Pitts Town, New Jersey and By Robert Barnhill, No. 63 North 2nd Street, Philadelphia.

Figure 5

*Will be exposed to public sale, on Friday the third of September next, at the hour of eleven o'clock, at the house of the subscriber in Worcester Township —Sundry articles of household and kitchen furniture, of the best quality. Also, 1 wagon, 3 pair of gears, 1 harrow with sundry other implements of husbandry — likewise 1 breeding mare, 1 other colt, 1 cow, etc.
David Rittenhouse.*

Abraham Lincoln and presently in the Museum Building at New Salem Park Illinois, is attributed to the partnership of Benjamin and young David Rittenhouse. In 1802 young David advertised a sale of his properties in the *Norristown Herald and Weekly Advertiser* on August 7, 1802: (2 April 1802) (Figure 5)

As part of Pennsylvania's plan of post-Revolutionary internal improvement, in 1789 Benjamin Rittenhouse undertook a series of detailed observations of the Schuylkill River, supplementing the river exploration that his brother David had initiated while seeking routes suitable for a water connection between the

Schuylkill and Susquehanna Rivers. Seven years later, by an Act of Congress, Benjamin was commissioned to construct the standard surveyor's chain for the United States Land Office.

Two years later Benjamin found himself in serious financial difficulties. He was forced to liquidate his Worcester clock shop, and in 1802 his properties were sold at a sheriff's sale, as advertised in the *Norristown Herald and Weekly Advertiser* of April 2, 1802 (Figure 6)

No record has been found describing the cause of Rittenhouse's financial difficulties, but he managed to recover quickly, for in 1803 his taxes in Norriton listed one lot and a dwelling, one horse and one cow. In the following year he

was appointed county judge, a position he retained until his death. In 1807 Benjamin Rittenhouse finally removed from Montgomery County and established himself permanently in Philadelphia as a maker of mathematical instruments, which he continued until his death on August 31, 1825. *A*

Silvio Bedini is a Historian Emeritus of the Smithsonian Institution. He is the author of more than 300 articles and monographs published in scholarly periodicals, and is presently completing his 23rd book.

Reference notes for this article may be found on our website at www.theamericansurveyor.com.

Figure 6

Sheriff's Sale: By virtue of a writ of Venditioni Exponas to me directed will be exposed to public sale on Wednesday the 7th day of April next, at 10:00 o'clock A.M. on the premises. Four tracts or parcels of land, containing, in whole seventy-nine acres more or less, on which are erected, a good two story stone house, stone barn and frame tenement; situated in Worcester and Providence Townships, Montgomery County, on the Manatawny Road, adjoining lands of Ephraim Armstrong, and others. Also—will be sold at the same time and place, one coachee, wagon and gears, two horses, one eight-day clock, smith's tools, and a variety of other household and kitchen furniture too tedious to enumerate. Seized and taken in execution as the property of Benjamin Rittenhouse, and to be sold by Isaiah Wells, Sheriff.

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