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Boston and Brookline Directories 1839-1935 Division of Vital Statistics, The Commonwealth of Massachusetts (Vol. 455 Page 336 No. 202 for Edward Samuel Ritchie).

BENJAMIN RITTENHOUSE (1740 - 1825)

Philadelphia, Penna.

"Benjamin Rittenhouse was born in Norriton township, now Montgomery County, Pa., about 1740; and died in Philadelphia August 31, 1825. He was working as late as 1819.

From 1776-1778 he was superintendent of a gun factory, maintained by the state of Pennsylvania. He sat in the Assembly of Pennsylvania from 1784 to 1788 and was appointed commissioner to survey the Schuylkill River in 1789. In 1792, he became associate judge to the court of common pleas of Montgomery County. His surveyor's chain made by order of Congress in 1796 has been in the standard of the United States land office ever since. He was a brother of David Rittenhouse."

He advertised for an apprentice in 1786.

There are photographs in the Gurley Museum of the following described compass made by Benjamin Rittenhouse.

The Historical Society of Pennsylvania Surveyor's Vernier Compass Length o.a. 13-1/4" 5" Needle No level vials. It is engraved "Made by Benjamin Rittenhouse".

Atwater Kent Museum 15 South 7th Street, Philadelphia. Surveyor's Vernier Compass Length o.a. 14" Needle 5" 1 Level Vial. It is engraved Benjⁿ Rittenhouse, Philadelphia.

The Franklin Institute Surveyor's Vernier Compass, No level vials Length o.a. 14" needle 5" Engraved on compass north end of compass swing arm "Benj. Rittenhouse".

Buffalo Historical Society, Buffalo, N. Y. Surveyor's Vernier Compass Length o.a. 13" Needle 5-1/4" 2 Level vials Engraved B. Rittenhouse Pennsylvania.

James E. Chessor, Centerville, Tenn. Surveyor's Plain Compass. It is engraved "Benjamin Rittenhouse Fecit Anno 1790" no level vials.

United States National Museum U.S.N.M. No. 310.815 Surveyor's Plain Compass Engraved "B. Rittenhouse" 16" o.a. 5" needle no level vials. Also engraved A. Ellicott.

Valley Forge Historical Society, Valley Forge, Penna. Surveyor's Plain Compass. It is 15" overall, The needle is 6" long, one circular level vial. It is engraved "Benjamin Rittenhouse Fecit Anno 1790".

The Ohio State Museum, Columbus, Ohio Surveyor's Plain Compass, It is engraved "Made by Benjamin Rittenhouse 1787" It is 13-1/4" overall Needle 5-1/16" No level vials.

The Henry Ford Museum, Dearborn, Michigan Surveyor's Plain Compass It is 15" overall needle 5-3/8" No level vials. It is engraved "Made by Benjamin Rittenhouse Philad^a County".



Benjamin Rittenhouse Surveyor's Plain Compass
Photograph courtesy Ohio State Museum.

DAVID RITTENHOUSE (1732 - 1796)

Philadelphia, Pennsylvania

David Rittenhouse, was born at Paper Mill Run, Roxborough township, near Germantown, Philadelphia County, Pennsylvania on April 8, 1732. He died in Philadelphia June 26, 1796.

His first public service was a boundary survey for William Penn in 1763-64 to settle a dispute with Lord Baltimore. He laid out on the ground, the twelve mile radius around Newcastle, Delaware which forms the boundary between Pennsylvania and Delaware. So accurate was the work that it was accepted by Mason and Dixon. In 1770 he removed to Philadelphia. He was employed as a surveyor between 1779 and 1786 on boundary surveys and commissions involving Pennsylvania, Delaware, Maryland, Virginia, New York, New Jersey and Massachusetts--over half the British colonies in America. He was the first one in America to put spider web in the focus of his telescope. He was professor of astronomy in the University of Pennsylvania and served on its board of trustees. He made and repaired instruments for Washington. Franklin consulted him on various occasions. For Jefferson he standardized the foot by pendulum measurements in a project to establish a decimal system of weights and measures. He was appointed the first director of the Mint by Washington on April 14, 1792 and served until June 1795. He was painted by Peale and Trumbull, a marble bust was made by Ceracchi and a bronze medal by Barber, engraver of the Mint.

At Franklin's death he was elected president of the American Philosophical Society on January 7, 1791 and by re-election until his death.

DAVID RITTENHOUSE AND THE COMPASSES HE MADE FOR GEORGE WASHINGTON

David Rittenhouse lived sixty-four years, from 1732 to 1796. For thirty-five years he was an obscure countryman in Norriton township, a farmer, maker of clocks and mathematical and surveying instruments, and local surveyor. From childhood he had a curious mind. He read, figured, and tinkered. He mastered mathematics, astronomy, and Newton's Principia. He designed and made the first declination arc for a surveyor's compass.

A transit of Venus was due to occur in June 1769. For the American Philosophical Society he built and equipped the Norriton observatory. When the observations were reported and the results were calculated, Rittenhouse was an astronomer of international reputation. Influential friends persuaded him to move into Philadelphia in 1770.

After the Revolution, Rittenhouse, a scholar and citizen of the Republic, became president of the Philosophical Society, fellow of the Royal Society, trustee of the University of Pennsylvania, surveyor of state boundaries, and first director of the Mint.

David Rittenhouse has been dead one hundred and sixty-six years (1962) but Rittenhouse clocks still strike the hours. Some of his surveyor's compasses, which now are precious museum pieces have been fortunately preserved for the admiration of present day instrument makers. The orrery is still a marvel of the mechanician's art. On the hillsides at Norriton, around State House Square, and in the halls of the Philosophical Society his spirit lingers. Streets, Parks, a social club, a school and a scientific body bear his name.

Among the surveyor's compasses that bear his name, the best known are the two that he made for George Washington.

The New York State Library in Albany, N.Y. has a D. Rittenhouse, Philadelphia Surveyor's Vernier Compass. It is 13-1/2" overall with a 5" Vertical Needle.

In the cover of the box that contains this compass is the following label: "The instruments contained in this box, together with case of protracting instruments in a Shageen case, two surveyor's chains & the wooden pins used with the same were the property of General Washington and used by him when a very young man.

These instruments descended to my father, Col. William A. Washington (the General's oldest nephew) and from him to me, and by me presented to my son, Lewis W. Washington, February 10, 1854.

G. WASHINGTON

Georgetown, D. C.
February 10, 1854"

This compass was authorized to be purchased by the Legislature of the State of New York by the act called the Supply Bill passed April 26, 1871. It was deposited in the New York State Library as the property of the state in the latter part of the year 1873.

A complete report concerning this Compass and its acquisition may be found in the "Annual Report of New York State Library" for 1873 pages 140 to 146.

The Smithsonian Institution in Washington, D. C. has a surveyor's Vernier Compass. It is 14" overall with a 5-1/2" needle. It is engraved "Rittenhouse Philadelphia". It has no level vials.

The documentation that supports the attribution that the Rittenhouse compass was used by Washington is a letter from Mr. Wilcomb E. Washburn, Curator, Division of Political Economy, Smithsonian Institution, to the writer of this article under date of 22 December 1960. "There is, in the possession of the Division of Political History, a bound volume of original manuscript letters entitled: "The Cor-

respondence relating to the Surveyor's Compass of Gen. George Washington, made and presented to him by David Rittenhouse, the Philosopher and Mechanic, of Philadelphia, 1782. Which was given by the Farmer of Mount Vernon to Captain Samuel Duval, the County Surveyor of Frederick County, Maryland, 1795, and had passed through the hands of William Hobbs & Son, 1815, and of Captain George Riner, 1852, into the possession of Anthony Kimmel, all of Linganore, Frederick County, Maryland." Mr. Kimmel informed the President of the Historical Society of Pennsylvania in December, 1850, that he possessed the compass, and presented his correspondence with George Washington Parke Custis, the grandson of Martha Washington, to confirm his view."

Other David Rittenhouse Surveyor's Compasses that are not mentioned in the text: The Historical Society of Pennsylvania, Philadelphia Pennsylvania, Surveyor's Vernier Compass. Engraved D. Rittenhouse Norriton Fecit. Length overall 14", Needle 5-1/2", No level vials.

Germantown Historical Society Philadelphia Pennsylvania, Surveyors Plain Compass. Length overall 13-1/8", Needle 4-3/8", No level vials. Engraved Rittenhouse, Philadelphia.

Historical Society of Montgomery County, Norristown Pennsylvania, Surveyor's Level 21" overall. Engraved D. Rittenhouse Philadelphia.

There is also in the Smithsonian Institution in Washington D. C. a large Zenith Telescope Cat. No. 152078 made by David Rittenhouse for Andrew Ellicott.

In the Gurley Museum is a large David Rittenhouse compass with an unusual history. Mrs. Grace R. Armstrong (Armstrong's Old Mill Shop) wrote under date of April 22, 1960 that "they had bought several years ago, from a "runner", who had recently cleaned out an old attic in Germantown, Pennsylvania, a large compass in a black walnut box. It was found, by cleaning, that the name David Rittenhouse Philadelphia appeared on the needle circle. There was a hole in the bottom of the box so that it could be set on a Jacob Staff When the compass was used." The Compass is set in gimbals which take the place of level vials.

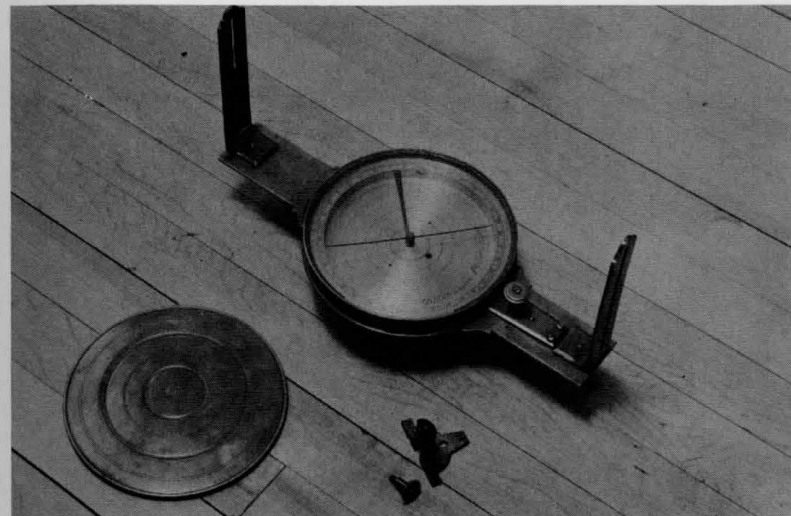
The "box" was made of black walnut with handles on the ends by which it could be carried. The outside diameter of the needle circle is 11", the diameter of the divisions and engraved figures is 9-3/4". The needle circle is in quadrants. There is a bowl on the bottom of the compass which has eight pounds of lead in it to lower the center of gravity and also to make it swivel more easily. The needle is 8" long. Mrs. Armstrong ends her letter as follows:

"Alas! On December 27, 1955 at 4:00 A.M. we lost everything including the compass".

However, it was learned from Mrs. Armstrong that there had been a photograph of the compass taken some time before the fire and that

a few pieces of the compass had been salvaged. Mrs. Armstrong was advised that if those parts were sent to W. & L. E. Gurley that it might be possible to reconstruct the compass. She sent the needle circle, engraved with the words "David Rittenhouse Philadelphia", the 8" needle, which had not lost its magnetism, one of the brass carrying handles, and its holding bolt and nut, a portion of triangular supporting piece of the vernier and sight, one of the gimbals and one of the connecting rods between the inner and outer gimbals.

With the aid of the photograph and the salvaged pieces, the Gurley factory was able to reconstruct the David Rittenhouse compass as shown in the illustration.



David Rittenhouse Compass in the New York State Library



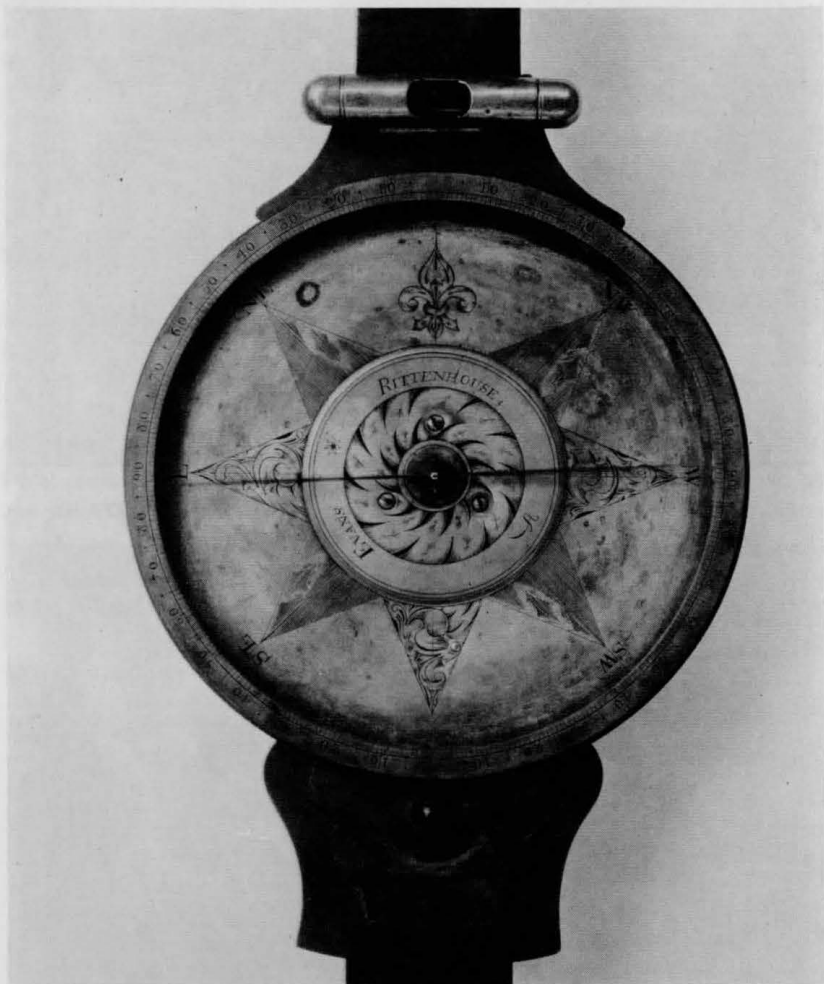
Reconstructed David Rittenhouse Surveyor's Compass in Gurley Museum.

RITTENHOUSE AND EVANS

It is assumed that Benjamin Rittenhouse and Evans were partners in Philadelphia making the two compasses described below though a search of Philadelphia directories from 1785 to 1830 reveal any such partnership.

The Historical Society of Pennsylvania has a Rittenhouse and Evans surveyor's vernier compass. It is 15-1/4" overall with a 6" needle. It has one level vial and no sights. On the bezel cover is engraved "The property of Andrew Porter (1743 - 1813) and afterwards of Robert Brooke (1770 - 1821).

The surveyor's vernier compass in the Smithsonian Institution in Washington D. C. is 14" overall with a 5" needle and 1 level vial.



Rittenhouse & Evans Surveyor's Vernier Compass
Photograph courtesy of Smithsonian Institute

RITTENHOUSE AND POTTS

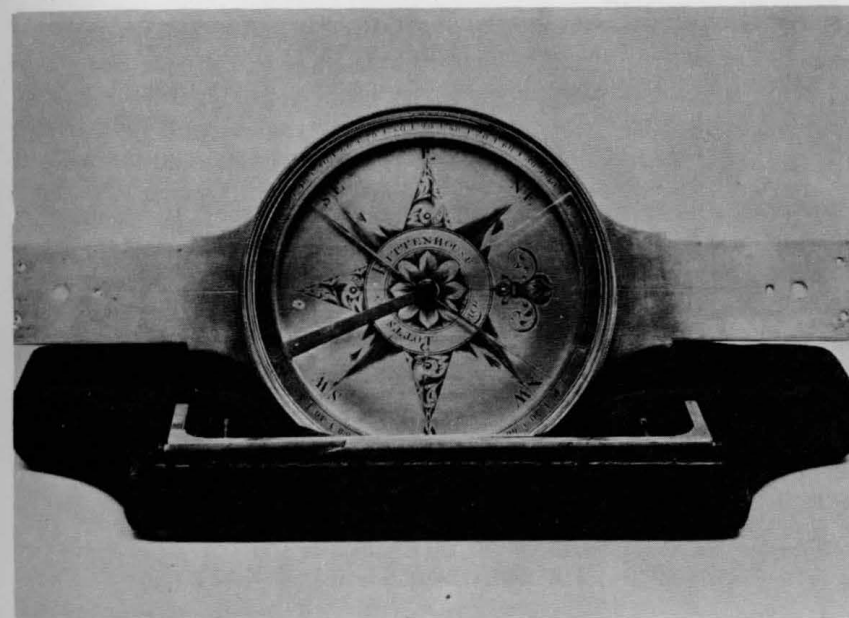
It is assumed that Benjamin Rittenhouse and W. L. Potts were partners in making the three surveyor's compasses described below and also that they were made in Philadelphia.

Diligent search in the Philadelphia directories from the first one issued to 1825 reveal no mention of this firm.

The American Philosophical Society in Philadelphia has a Rittenhouse and Potts surveyor's plain compass.

In the H. F. duPont Winterthur Museum, Winterthur, Delaware is a surveyor's plain compass. It is 14" overall with a 4-7/8" needle and no level vials.

There is a Rittenhouse and Potts surveyor's vernier compass privately owned in Waterloo, Illinois. It has two level vials.



Rittenhouse & Potts Surveyor's Plain Compass
Photograph courtesy, Henry Francis duPont Winterthur Museum.