

FREDERICK HEISELY: CLOCK AND COMPASS MAKER

Silvio A. Bedini

Most clockmakers in the late 18th and early 19th centuries specialized in clocks, leaving the production of surveyor's compasses in the hands of mathematical instrument makers. Some, however, made both types of instrument. Included in this number were John G. Hoff and his son John, George Ford, and David and Benjamin Rittenhouse of Pennsylvania, Andrew Ellicott and the Chandlee family of Maryland, Jonathan Simpson of Kentucky, George Crow of Delaware, John Potter of Massachusetts, Horatio Clark of Vermont, Stephen Hassam of New Hampshire, and Daniel Burnap, Thomas Harland, Benjamin Hanks, Gurdon Huntington, and the Doolittle family of Connecticut--and also Frederick Heisely.¹

Frederick Heisely (1759-1843) belonged to the large but not very well known group of highly skilled craftsmen of German descent who catered to the community of rich German-American farmers in Pennsylvania and Maryland. Heisley, who was born in Lancaster, Pennsylvania, apprenticed with John George Hoff, a Lancaster clockmaker born and trained in Germany. In 1778 he enlisted in the Second Pennsylvania Regiment, and saw service in New Jersey and Philadelphia. In 1783, after completing his apprenticeship, Heisely married Hoff's eldest daughter, Catherine. Soon thereafter he moved to Frederick (then termed Fredericktown), Maryland, and opened shop. On January 15, 1786 the following advertisement appeared in *The Maryland Chronicle*:

Frederick Heisely

Clock and watchmaker begs leave to inform the public in general, and his old customers in particular, that he has removed his shop to his dwelling house at the Sign of the Dial opposite Mr. Jacob Steiner's Saddle shop and store in Market Street in Frederick-Town where he now follows making clocks of all kinds. Musical chime clocks as well as common and plain ones, likewise large town-clocks if required, repairs in the best manner and at a most reasonable rate. He also makes surveyors Compasses and other Mathematical Instruments, such as protractors, scales of different sorts, 2 or 4 Perch chains, and Pocket compasses with sun dials, &c. &c. N.B. He gives the highest price for brass.

There are many published accounts of Heisely's whereabouts during the next dozen or so years, and most of them disagree with one

another. The correct chronology seems to be as follows. Heisely probably moved back to Lancaster in 1793, joining into a partnership with his father-in-law. Soon, however, he returned to Fredericktown, perhaps lured by the opportunity to build a tower clock for the (German) Evangelical Reformed Church there. This clock, erected around 1796-97, kept time until 1953, when it was taken down and donated to the Smithsonian Institution. It is now on display in the Hall of Timekeeping in the National Museum of American History.

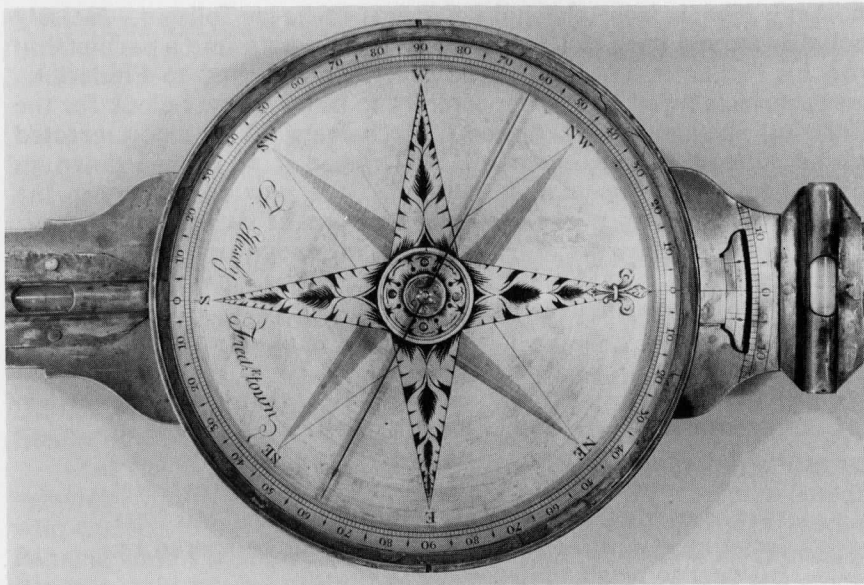
On September 12, 1798, perhaps in recognition that work on the tower clock had been completed, Heisely advertised in the Fredericktown newspaper, *The Rights of Man*:

FREDERICK HEISELY

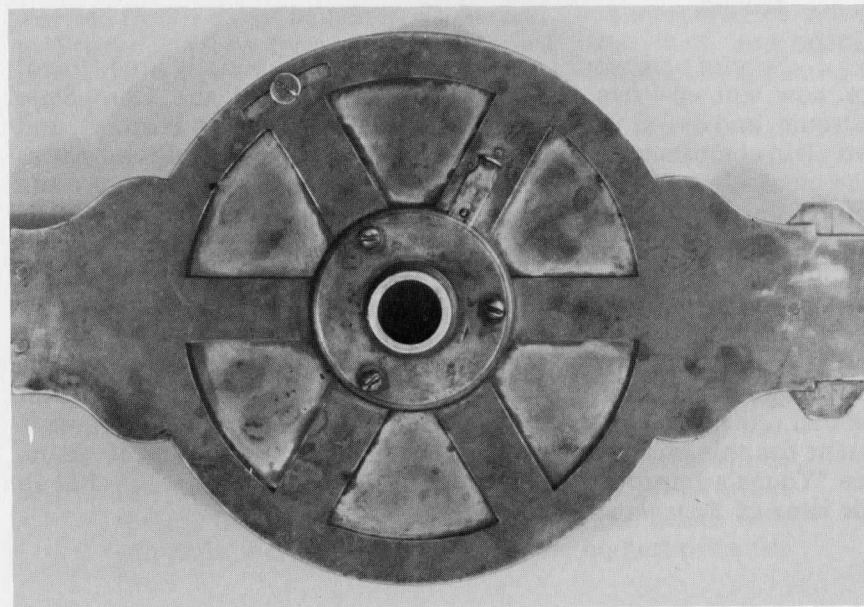
Respectfully informs the public that he has recommenced the clock and watchmaking business in the house he formerly occupied, next door to the post office, Frederick-Town. He returns his sincerest thanks to his friends and former customers, and begs leave to assure them that no pains shall be spared on his part to merit their future attention.

He makes, repairs and sells all kinds of surveyors instruments, at the shortest notice and on the most reasonable terms as usual, but much improved.

Several surveyor's compasses inscribed "F. Heisely Fred.^ktown" are now known--two vernier compasses (one at the Ohio State Museum, and one at the National Museum of American History), and two plain compasses (in private hands).² The dials on these compasses read clockwise. Presumably, therefore, these instruments were made before the elder Heisely knew about the counterclockwise dials introduced by David Rittenhouse, or before he was convinced that this innovation was an improvement on the old design.³ The NMAH compass is further unusual in that six segments have been cut out of its bottom plate, presumably to save brass and/or reduce the weight of the instrument. The Ohio State Museum instrument is further unusual in that it is built like a railroad compass, with the vernier on the dial rather than on the arm.⁴ It thus antedates William J. Young's patent for this improvement by perhaps as much as 20 or 30 years. (see "Young's Improved Compass Made By Hagger" pp. 125-128 in this issue of *Rittenhouse*.)



Surveyor's Vernier Compass marked "F. Heisely Fred:town" (NMAH)



Underside of Surveyor's Vernier Compass marked "F. Heisely Fred:town" (NMAH)

Several surveyor's compasses, both plain and vernier, signed "F. Heisely Harrisburg" are known (one is in the Audubon Society at Audubon, Pennsylvania), made after the Heiselys' 1811 move to the capital of Pennsylvania.

Heisely's two sons, George Jacob (1789-1880) and Frederick Augustus (1792-1875), were both brought up into the business. In addition to his skill with clocks and compasses, George Jacob Heisely played the flute and, it is claimed, played a major role in the history of "The Star Spangled Banner." During the War of 1812 he was serving in the Pennsylvania Militia, together with the musicians, Ferdinand and George Durang, when a copy of the poem that Francis Scott Keyes had penned during the bombing of Fort McHenry on September 13 and 14, 1814 reached their camp. Heisely suggested that the poem be sung to the tune of "To Anacreon in Heaven," a suggestion followed by the Durang brothers who soon thereafter introduced what was to become our national anthem on the stage of the Holliday Street Theatre in Baltimore. Frederick Augustus Heisely also served in the War of 1812, but was wounded.

Both brothers returned to Harrisburg, and to instrument making, after the War. There is at least one extant compass (in the Henry Ford Museum at Dearborn, Michigan) signed "Heisely & Son Harrisburg"--which son worked on this instrument is not known. There are also extant compasses signed "G. J. Heisely Harrisburg" and others signed "F. A. Heisely Harrisburg" (one is in the Gurley Collection at Troy, New York). Note that while the elder Heisely's compasses had an ornate rose, similar to that used by his mentor, his sons adopted a much simpler design: a star or fleur-de-lis at north, and letters indicating the cardinal and ordinal points.

In 1836 Frederick Augustus sold his property in Harrisburg, moved to Pittsburgh, and advertised as a "Clock, Watch, and Mathematical Instrument Maker." In 1839 the following advertisement appeared in *The Harrisburg Directory, and Stranger's Guide*:

GEORGE J. HEISELY

Clock, Watch and Mathematical Instrument Maker Respectfully informs his friends and the public in general, that he intends to carry on the above business in all its various branches, and that he has on hand an assortment of Compasses and Drafting instruments of a superior quality for Engineers, Surveyors and Architects, and is ready to make to order on the shortest notice all kinds of instruments in his line, on moderate terms, at his shop on the West Corner of Second and Walnut Streets.

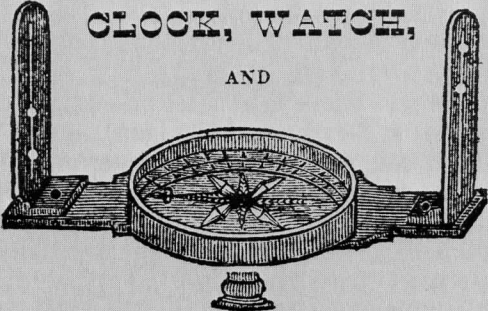
An apprentice will be taken, and a journeyman watch maker or instrument maker will find employment.

1. Charles Smart, *The Makers of Surveying Instruments in America Since 1700* 2 vols. (Troy, NY, 1962 and 1967).

2. Smart, *op. cit.* See also William Guthman, "Surveyor's Equipment of the Western Frontier," *Antiques* (Sept. 1970), p. 424.

3. Deborah Warner, "The Surveyor's Compass," *Rittenhouse* 1 (1987): 66.

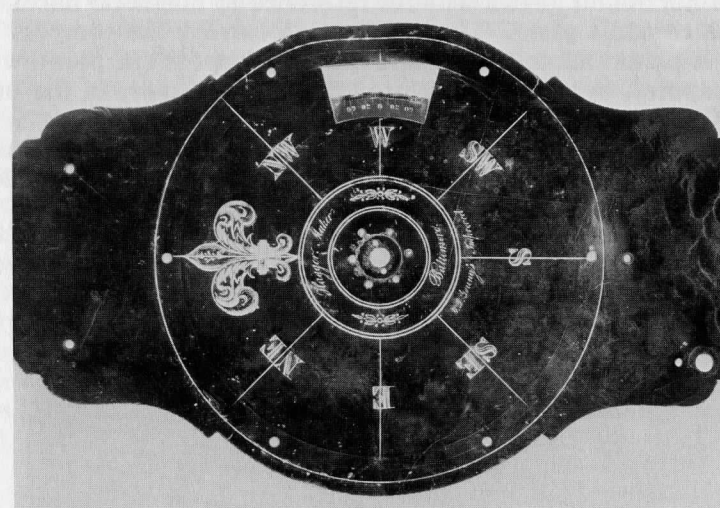
4. shown in Silvio A. Bedini, *Early American Scientific Instruments and Their Makers* (Washington, D.C., 1964), p. 61.

F. A. HEISELY,
CLOCK, WATCH,
AND

Mathematical Instrument Maker,
No. 6, St. Clair Street,
Between Penn and Liberty,
PITTSBURGH.

from Harris' *Pittsburgh Business Directory*, 1837.

YOUNG'S IMPROVED COMPASS MADE BY HAGGER

Deborah Jean Warner



Brass Object from Rio Grande County Museum and Cultural Center

This brass plate was found in 1961 at Saguache, Colorado, near a shelter used by Native Americans. It is now in the Rio Grande County Museum and Cultural Center in Del Norte, Colorado. The plate is 16" long; the center section is 6½" diameter. Marked around the center are the words "Hagger Maker Baltimore", and "W. J. Young's Improved". The cardinal and ordinal points are marked with letters; a fleur-de-lis marks north. At west there is an opening (1½" x ½") with a vernier (60-30-0-30-60) with 12 divisions to each side of the central zero (presumably reading to 5'). There are 6 small holes evenly spaced around the edge of the center section (presumably to hold a graduated ring); 3 holes at the end of each arm (to hold vertical sights); 2 holes on the northern arm (for an e-w level) and 2 on the southern arm (for a n-s level); 2 more holes, one larger than the other, on the southern arm (to hold the tangent screw). Surrounding the central hole (through which the needle pivot and a shoulder on the center passed) there are several more small holes (to hold the center to the upper plate, to attach a cover plate to the lower end of the center, and for the needle lifter screws).

This Colorado instrument appears to be the upper plate of a surveyor's vernier compass of the form invented by William J. Young (1800-1870), an enterprising mathematical instrument maker in Philadelphia.¹ Young applied for a patent on his improved compass