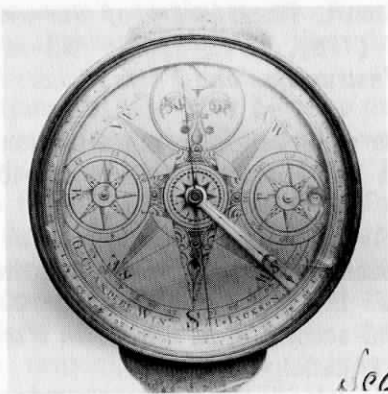


A SURVEYOR'S COMPASS MADE BY GOLDSMITH CHANDLEE

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A surveyor's plain compass made in Winchester, Virginia around 1800 has recently surfaced in Portland, Oregon. The compass was made by Goldsmith Chandlee (ca. 1746-1821), a prolific maker of mathematical instruments, clocks, sundials, telescopes, steelyards and other scales, and surgical instruments. Born to a Quaker family, Chandlee apprenticed with his father, the clockmaker Benjamin Chandlee, Jr. in Nottingham, Maryland. In 1775 he moved to Virginia, worked with the silversmith William Richardson, and then established his own brass foundry and shop.¹



The face of this compass has two circular dials, controlled by knobs under the compass box, which were used to keep track of the linear distances surveyed. The dial at the western point is labeled "P" and that at the eastern point is labeled "M." The "P" (for "pole") dial appears on every Chandlee compass that has been published or is available in a public collection.² The "P" dial is graduated into 320 parts in divisions of 20, and numbered every 40 divisions (40 poles = 1 furlong, 320 poles = 1 mile). Within the "P" dial is a window that reveals the outkeeper, recording numbers from 1 to 16 on a revolving wheel set below the compass face. This was used to count the number of 5-chains that had been run (5 chains = 20 poles; 16 x 5 chains = 320 poles = 1 mile). The "M" dial is graduated into 21 parts, and numbered every 3 divisions. Its tiny gold clock hand has a non-reversible counterclockwise motion. The "M" dial, which was probably used to record the miles, has been found on only two other compasses.³

Most Chandlee compasses were made to order. The ornate face of this compass is signed "G: Chandlee Win^c I*Jackson." The cover carries the monogram "JJ" and the date "1801." (That date may reflect the year the compass was made, although it may be the year the compass was acquired by its second owner.) The original owner

was probably John George Jackson (1777-1825). Born in Buckhammon, Virginia (now W Va), Jackson represented that district in Congress for several terms (1798-1801, and 1813-1817).⁴ Previously he had found work with the Federal Land Survey which mandated the survey of all public lands prior to settlement. On July 12, 1797 he contracted with the Surveyor General, Rufus Putnam, to run the township lines of the south middle sections of the Ohio Companies' Virginia Military District. He was appointed a Deputy Surveyor under the Land Act of 1800.⁵

The compass cover is also signed in lavish script "Benjamin Hough's Compass." This must refer to the Benjamin Hough responsible for *A Map of the State of Ohio from Actual Survey by B. Hough & A. Bourne* published at Chillicothe in 1815. On April 28, 1815, Hough contracted with General Edward Tiffin, first Commissioner of the General Land Office, to survey the principle meridians within the Michigan Territory.⁶ Due to "errors with the compass," many of these lines were resurveyed in 1840 by William A. Burt, inventor of the Burt solar compass.⁷

With the admirable fashion in which the names of the past owners are inscribed on this compass, one can develop a feeling for the respect given this instrument as being the most important tool of their mutual trade.

1. "Goldsmith Chandlee," in Edward E. Chandlee (ed.), *Six Quaker Clockmakers* (Philadelphia, 1943), pp. 105-146.

2. Edward E. Chandlee, *op. cit.*; Charles E. Smart, *The Makers of Surveying Instruments in America Since 1700* (Troy, 1962), pp. 27-28; Silvio A. Bedini, *Early American Scientific Instruments and Their Makers* (Washington, D.C., 1964), pp. 54-7; William H. Guthman, "Surveyors' Equipment and the Western Frontier," *Antiques* (Sept., 1970), p. 427. Colonial Williamsburg has two compasses by Goldsmith Chandlee, and NMAH has one.

3. William H. Guthman, *op. cit.*, and Silvio Bedini, "Collector's Corner," *Professional Surveyor*, vol 4, #6, p. 44. These are the only vernier compass made by Chandlee.

4. *Who Was Who in America*, Historical Volume, 1607-1896 (Chicago, 1967), p. 344.

5. C. Albert White, *A History of the Rectangular Survey System* (Washington, D.C., 1983), p. 37; Rowena Buell, *The Memoirs of Rufus Putnam* (Boston, 1903), p. 419; William D. Pattison, *Beginnings of the American Rectangular Land Survey System, 1784-1800* (Columbus, 1957), p. 207.

6. Clarence E. Carter (ed.), *The Territorial Papers of the United States*, vol. 10, Territory of Michigan, p. 603. (Washington, D.C., 1942).

7. Knox Jamison, *The Survey of the Public Lands in Michigan* (Los Angeles, 1978), p. 197.