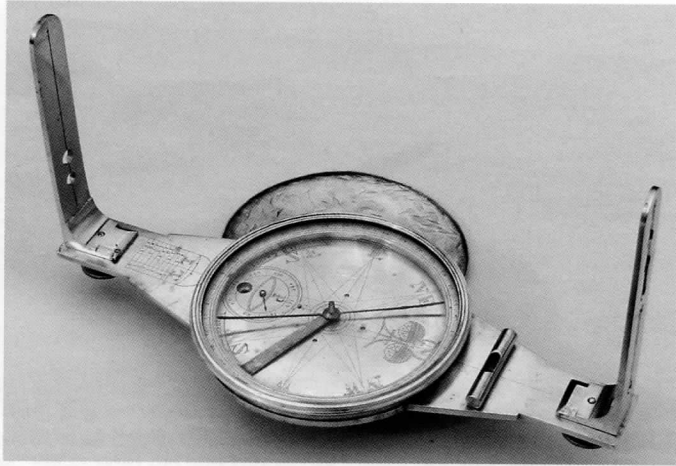
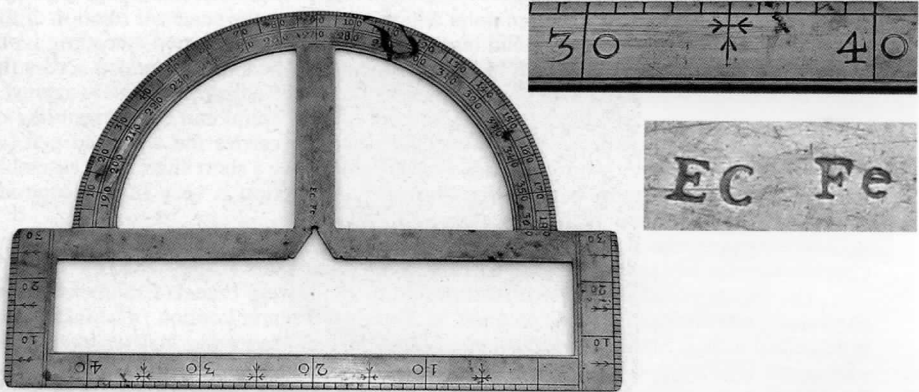


26. RARE VIRGINIA SURVEYING

COMPASS, American, mid-19th century, signed on the silvered compass face "G.B. Graves, Winchester." This large brass sighting compass, of the classical American form, measures 16" (41 cm) long, with 7-1/8" tall sight vanes and 7-1/8" diameter compass surround. The heavy main plate varies from 0.15 - 0.22 inches in thickness, and is mounted with spirit level, outkeeper mechanism, needle lifter mechanism, and staff mount, and is engraved with the uniquely Chandlee / Graves form of "L / T" table. The compass itself is engraved with an eight-point rose, a circumferential degree scale divided by half-degrees from 0 to 90 in each quadrant, and a 0 (20) 320 outkeeper "P" circle (with rotatable pointer and 1 - 16 counter), all with a distinctive, primitive punched-circle decoration. The compass has its early edge-bar needle and glass, and hammered brass cover. Condition overall is fine, the brass cleaned but not polished. We note some surface nicks and scratches, a few small assembly screws replaced, and the staff mount thumb-screw lacking. The craftsmanship is rather coarse, typical of this maker.

George B. Graves (1792 - 1873) was born in Loudoun County, Virginia, and established himself as clock and watch repairer in Winchester, Virginia. In 1821 he purchased many materials and compass parts from the estate of Goldsmith Chandlee, and commenced to produce instruments in Chandlee's style, but with Graves' own distinctive punch-work decoration. There is a compass by Graves in the Gurley collection (see Smart, and Skerritt), and one is recorded by Bedini in a private collection. The L/T table seems unique to Chandlee / Graves compasses; its interpretation is discussed by Bedini (*With Compass and Chain*, 2001, pp.374-377). \$4500.





27. **EARLY CULPEPER PROTRACTOR / SCALE RULE**, English, c. 1700, stamped "EC Fe." Measuring 5-1/2" x 3-3/4" (14 x 9 cm) overall, the instrument is made of brass with hand-engraved numerals throughout (except for all zero's and eight's hand punched, using one oval and two circular punches). The semicircle is divided every degree and labeled 0 (10) 180, and likewise 180 (10) 360. The inverted plotting rectangle has a horizontal scale divided by tenths of an English inch from 0 to 40 tenths, and twin vertical scales divided by twentieths of an inch from 0 to 30 twentieths. The "5" positions have distinctive triple and double arrow marks. Condition is fine noting some darkening to the brass, and minor stains and nicks.

The maker was evidently Edmund Culpeper senior, apprentice (in 1684) and successor to Walter Hayes, master in the Grocer's company, and remarkable craftsman of mathematical instruments (see Brown, 1979). We have seen the same cryptic punched signature, as here, on an early Culpeper screw barrel microscope. The form of this protractor / scale appears in period literature, e.g., opposite p. 554 of William Leybourn's 1690 *Cursus Mathematicus*.

A good early example, by an important maker.

\$1950.