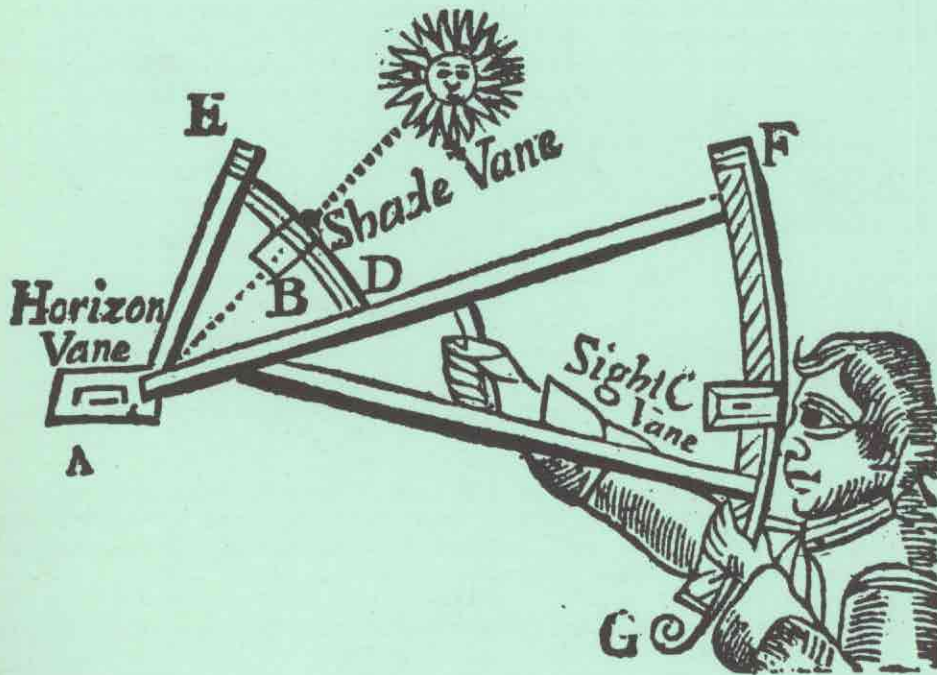


Historical Technology

Catalog 106



SAUL MOSKOWITZ INSTRUMENT ENGINEERING

6 MUGFORD STREET

MARBLEHEAD, MASSACHUSETTS 01945

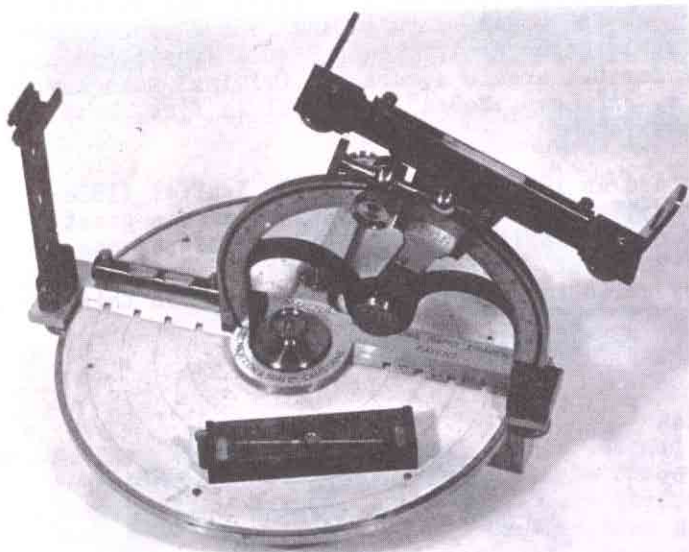
(617) 631-2275

43. Robert Gibson, "THE THEORY AND PRACTICE OF SURVEYING; Containing All the Instructions requisite for the skilful practice of this Art.", (4th N. Y. ed.), Duyckinck, New York, 1811. Original leather binding 9" h, 5½" w; pgs. (2), 324, (16), 17-184, 13 fold-out plates (Karpinski mistakenly calls out 14). Plate VII missing and replaced in facsimile, some staining and cover wear, still rather good condition. Taylor 2 notes that the 2nd ed. of Gibson's book was published in 1787, and that he may have been Irish. The 1st American ed. (called the 4th) was published in 1785 and by 1839 there had been 22 editions in all in this country. (postpaid) \$ 20
44. John Gummere, "A TREATISE ON SURVEYING CONTAINING THE THEORY AND PRACTISE: To which is Prefixed A PERSPICUOUS SYSTEM OF PLANE TRIGONOMETRY.", 14th ed., Kimber & Sharpless, Philadelphia, 1841. Original mottled calf (in excellent condition) 9" h, 5 3/4" w; pgs. 266, 152, the 11 fold-out engravings with the fine examples of the theodolite (pl. 9) and wye level (pl. 10). Contents fine. An American book that continued in use for over 100 years with the 1st ed. in 1814 and one noted as late as 1917. Interestingly this is the 4th printing of the 14th ed. of 1838 which followed an 8th ed. of 1837. The 9th through 13th eds. never existed. An interesting and important book and possibly a rare issue since it is not listed in Karpinski. (postpaid) \$ 30
45. "A MANUAL OF THE PRINCIPAL INSTRUMENTS USED IN AMERICAN ENGINEERING AND SURVEYING", 20th ed., W. & L. E. Gurley, Troy, N. Y., 1873. Original cloth binding 6 3/4" h, 4 3/4" w, 185 pgs., fine condition. (postpaid) \$ 18
46. William Hawney, "THE COMPLETE MEASURER: OR THE Whole Art of Measuring, . . . To which is added An APPENDIX. I. Of Gauging, 2. Of Land-Measuring.", 12th ed., London, 1766. Original leather binding (rebacked) 6 3/4" h, 4½" w; pgs. ix, (3), 346, 2 with text woodcuts. Very good condition. Hawney (fl. 1710-50) was (Taylor 2) "a typical country mathematical practitioner of the early 18th c. He undertook land-survey, supplied sun-dials and quadrants for house and garden, as well as teaching the whole range of simple practical mathematics and the use of mathematical instruments." The 1st ed. of this book on how to measure anything (or everything) was published in 1717. (postpaid) \$ 26
47. Thomas Hornby, "A TREATISE ON THE NEW METHOD OF LAND SURVEYING," 1st ed., London, 1827. Original boards (spine worn in part) 9½" h, 6" w; pgs. xv, (1), 270, the 6 large fold-out engraved plates. Fine condition except as noted. A land-surveyor (fl. 1790-1827), Taylor 2 states "Hornby taught all branches of his profession, including the way of dealing with enclosures. He gives (in the book) examples of his own surveys, one dated 1805, and refers to what he was taught thirty years earlier." ". . . this is a very thorough textbook." An interesting aspect of it is his emphasis on the "Field Book" and the number of full page engravings provided in example. This book represents the best in English surveying early in the 19th c. (postpaid) \$ 35
48. William Leybourn, "THE COMPLEAT SURVEYOR: CONTAINING The whole ART of Surveying of Land, BY THE Plain Table, Circumferentor, Theodolite, Peractor, And other INSTRUMENTS.", 4th ed., George Sawbridge, London, 1679. Original large leather binding (rebacked) 12" h, 7 3/4" w; pgs. (14), 438, the engraved frontis portrait, title page in red and black, 6 fold-out engravings, and many text woodcuts. Generally very good to fine condition except for minor spotting, and cover scuffing and a few worn page edges. William Leybourn (1626-1716) noted teacher and writer on astronomy, dialling, navigation, and mathematics was also one of the surveyors of London immediately after the Great Fire which brought him into association with Robert Hooke. (It may be remembered that a great chest filled with gold coins was found under Hooke's death bed; gold acquired in addition to his legal fee during this period of relocating other people's lands. Our enterprising Boston politicians are but babes compared to this noted scientist.) Leybourn also did a great deal of surveying during the rebuilding. His Compleat Surveyor was first published in 1653 with editions in 1657, 1674, 1679 (this one), and 1722. This is a large, finely printed book of major importance in English surveying. (postpaid) \$ 155

The Rare First American Edition

49. John Love, "GEODAESIA: OR THE ART of SURVEYING AND MEASURING LAND MADE EASY . . . AS ALSO to lay out New Lands in AMERICA, or elsewhere . . .", 12th Ed. Adapted to American Surveyors (1st American), Samuel Campbell, New York, 1793. Original leather binding 8½" h, 5½" w; pgs. (14), 9-189, (16), 3, (36), 7, (1); but for minor water stains and worming binding and contents in fine condition. The 1st English ed. was published in 1688 just after Love returned from surveying in Carolina and Jamaica. It remained a classic text for over 100 years; this edition of singular importance because it marks the first years of the great development of American surveying. (postpaid) \$ 95
50. Horatio N. Robinson, "A TREATISE ON SURVEYING AND NAVIGATION: Uniting The Theoretical, Practical, and Educational Features of These Subjects", 3rd ed., Cincinnati, 1853. Original leather binding 8½" h, 5½" w, 230 text pages, 101 pages tables; fine condition. (postpaid) \$ 10

The Compleat Surveyor



149. HENDERSON'S RAPID TRAVERSER - English, 2nd half 19th c, signed "MAKERS/E. T. NEWTON & SON LTD CAMBORNE". All brass in bright lacquered and black oxidized finish. Cast and machined base table 10" d with tripod mounting socket. Central pivoted arm 11 $\frac{1}{2}$ " long with removeable folding sight vanes 5 $\frac{1}{2}$ " h. 3" longitudinal bubble level. Arm at right angles with circular bubble level. Rear sight vane replaceable with theodolite attachment, 6" d elevation circle readout by vernier to 1 arcmin, sight vanes 2" h, 6 $\frac{3}{4}$ " apart with 4 $\frac{1}{2}$ " bubble level, tangent screw. Separate box compass 4" long, 1 $\frac{1}{8}$ " w. Original dovetailed mahogany case 12 $\frac{1}{2}$ " x 12" x 6 $\frac{1}{4}$ " h. Case in almost fine, Traverser in near mint condition (although 2 screws missing and liquid missing from circular bubble level). This appears to be a rather sophisticated version of the plane table alidade, the bearing data probably recorded on sheets of paper placed directly on the circular base. The finish on this instrument is exquisite and one must suspect that the rare collection which does have an example of this design cannot match the one here in condition.

(25 pounds, UP, Air Freight)

\$ 265

150. KUTZ SURVEYOR'S COMPASS - American, mid 19th c, signed "E. A. Kutz New York". All brass in (rare) black oxidized finish, 6" d compass w/ 5" needle and silvered dial, 14" long base w/ 2 $\frac{1}{4}$ " bubble levels, 6 $\frac{1}{2}$ " h screw-on sight vanes, 7 $\frac{3}{4}$ " overall ht. Original dovetailed walnut case 14 $\frac{1}{2}$ " long, 7" w, 3 $\frac{1}{4}$ " h in fine condition (except for 2 sm. holes in cover for attaching handle). Compass in extremely fine condition.

Smart lists two Erasmus A. Kutz's, Sr. (1778-18??) and Jr. (1822-1868). The father seems to have signed his instruments just "E. Kutz" so that we attribute this compass to his son. He is first listed in the N. Y. C. directories as an instrument maker in 1839 and last, before 1863.

(12 pounds UP, Air Freight) \$ 235



151. POCKET (OR AT LEAST QUITE SMALL) SURVEYOR'S COMPASS - English, 2nd qtr 19th c, signed "Troughton & Simms/LONDON". Black oxidized finish brass, 3 $\frac{1}{2}$ " d compass with silvered face, 2 $\frac{3}{4}$ " needle on 4 $\frac{1}{2}$ " baseplate, 3 $\frac{1}{4}$ " h fold-down sight vanes, overall ht (as shown) 5 $\frac{3}{8}$ ". Universal ball joint staff mount 4" long. Original dovetailed and painted pine box 5 $\frac{1}{2}$ " x 4 $\frac{3}{4}$ " x 3 $\frac{1}{4}$ " h in very good condition for its type of wood. Compass in fine condition.

Edward Troughton was regarded as England's leading instrument maker after the death of Jesse Ramsden in 1800. In 1826 he took William Simms in as partner to form the firm which produced this instrument. It is always a pleasure to handle one of their instruments, this one being no exception.

(6 pounds, UP,PS)

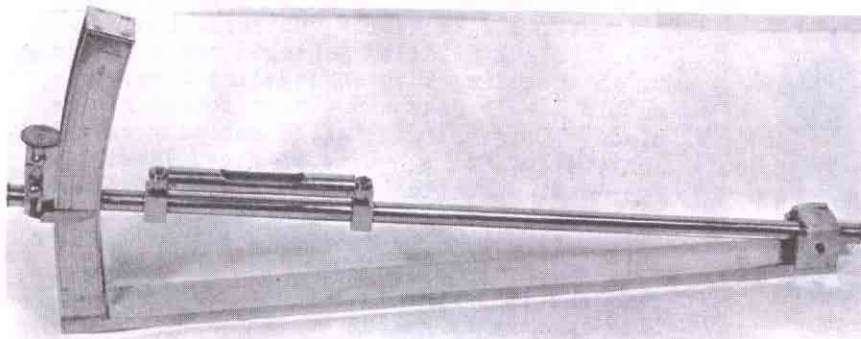
\$ 130

152. SURVEYOR'S OPTICAL SQUARE - English, mid 19th c, unsigned. Brass pocket sextant-like instrument 2 $\frac{1}{2}$ " d, 1" h in original leather case 3" d by 1 $\frac{1}{2}$ " h. The instrument consists of a peep sight, an index mirror set for a 90° angle (with realignment screw) and a half silvered horizon glass (again with adjustments). The adjustment key screws into the cover for stowage. Used by a surveyor for the quick (but accurate) check of the corners of a rectangular subdivision. Case in good condition, with only minor scuffing, and the optical square is in excellent condition.

(3 pounds, UP,PS) \$ 65

31





153. IMPRESSIVE LARGE SIGHT TUBE CLINO-METER - Signed "G. Boelau", 19th c; although found in Ireland, origin can not be established - the signed maker is not listed in the standard references. Brass construction; base 19 3/4" long, 1 5/16" w, 3/8" thick. Sight tube 1/2" d by 21 1/2" long with 4 1/2" long bubble level. Silvered readout scale 1 1/16" w divided to 1/2 degrees. Overall ht 8 1/2". In absolutely excellent condition. This is a rarity.

(12 pounds UP, Air Freight) \$ 225

154. A TRANSIT OF QUALITY - American, c. 1890, signed "W. & L. E. Gurley, Troy, N. Y." and "C. C. Hutchinson, Boston Mass." (the retailer). All brass in original Gurley green-gold finish, 12" h (telescope horizontal), base plate 6 3/4" d with 4 1/2" d silvered face compass, 4" needle. 5 1/2" d azimuth scale, vernier readout to 1 arcmin. Telescope 10 1/2" long with rack and pinion focussing of eyepiece and objective and 5 1/2" bubble level. 2 1/2" bubble levels on base. Original dovetailed mahogany field case 12" x 8" x 13 1/2" h. Case in almost fine and transit in extremely fine condition; it is not often that one can find such an instrument with its original finish in this condition.

The W. & L. E. Gurley Co. (originally Phelps and Gurleys until 1852) is one of the few American surveying instrument companies still in business. Charles C. Hutchinson (1832-1913) became a partner in the firm of F. W. Lincoln Jr. & Co. in 1858 and sole owner in 1883 whereupon the name was changed to the above.

(30 pounds UP, Air Freight)

\$ 325

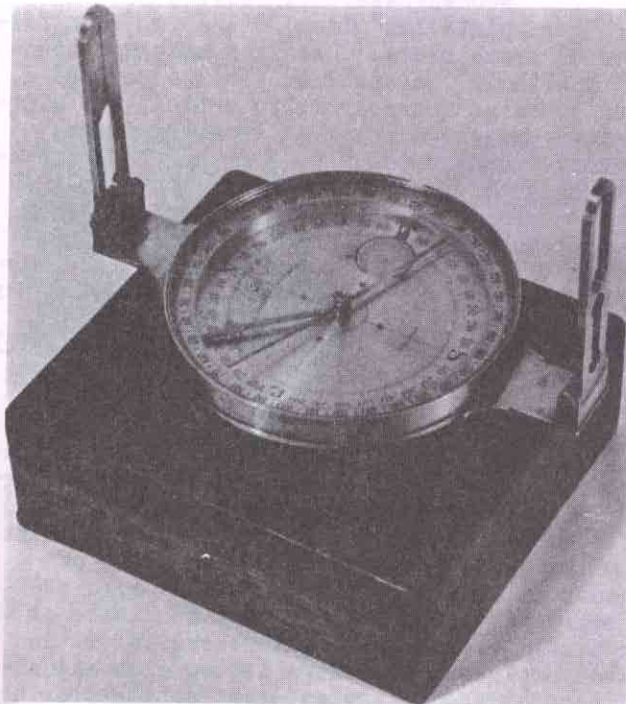


155. SURVEYOR'S COMPASS BY GARDNER - Scottish, c. 1850 dial face marked "GARDNER & CO. 21 BUCHANAN ST./GLASGOW". Brass compass with 6" d silvered dial, 5 1/2" long compass needle and 5 1/2" h folding sight vanes located 9 3/4" apart on compass frame. 1" d circular bubble level within dial face (liquid has leaked out). Edge ring of dial marked in 1° div ccw through 360°, dial face with 10° markings from 0 to 90 to 0 in both directions from North. In dovetailed mahogany case 8 3/4" w, 7 3/4" deep, 3 1/2" h. Case is in good and compass is in fine condition.

Gardner is an old name in Scottish instrument making, first entered in the Glasgow, Scotland Directory in 1787 as "John Gardner, mathematical instrument maker". Remained in the Directory with slight variations of name until 1920. Gardner & Co. was at 21 Buchanan St. between 1839-60. In 1860 they moved to 53 Buchanan St. This instrument shows a very early application of the circular bubble level.

(10 pounds, UP,PS)

\$ 180



AS A CONVENIENCE TO OUR CUSTOMERS

We will accept hold requests by telephone pending your immediate written confirmation with payment. If we do not hear from you within 4 business days, the item(s) will be sold to the next interested person. In addition, we will not accept hold orders from you in the future.



156. NICE ENGLISH LEVEL - 4th qtr 19th c, signed "Stanley, Gt. Turnstile, Holborn, London./ 345." Black oxidized finished brass 12" long, 5 1/2" h including 4 screw leveling base, 5 1/2" bubble level, rack and pinion focusing eyepiece. Original dovetailed mahogany case 13" long, 4" w, 6 1/2" h. Case in fine, level in excellent condition. This form of English Dumpy level seems to have been one of the basic designs used by Stanley since we find it in various sizes, both smaller and larger. This one is certainly a fine example of English instrument making of the period.

(12 pounds, UP,PS)

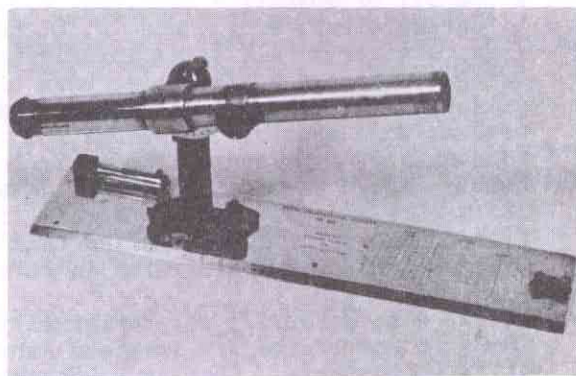
\$ 145

157. EXPLORERS TELESCOPIC PLANE TABLE ALIDADE - English, 4th qtr 19th c, signed "CARY, LONDON", "REEVES'/FOLDING ALIDADE/29" and "ROYAL GEOGRAPHICAL SOCIETY No. 25". Brass base 12" long, 2 5/8" w with 1 5/8" longitudinal bubble level, lateral one missing, engraved diagonal scale for 1/250,000 scale mapping, inch and millimeter rule and 4 1/2" h fold-down brass telescopic sight 9 1/4" long. Rack and pinion focusing of objective. Readout scale with 1° div between + and - 20°. Original dovetailed mahogany case 13" long, 4 1/4" w, 2 1/2" h. Case in very good, alidade in fine condition.

Made by a firm of noted instrument makers (established in 1765 according to label in cover) these plane table alidades seem to have been popular with explorers heading to the remote parts of the world. They were light in weight compared with the standard transit and permitted maps to be drawn in the field without the need for recording quantities of numerical data. The Royal Geographical Society inscription speaks for itself.

(7 pounds, UP,PS)

\$ 145



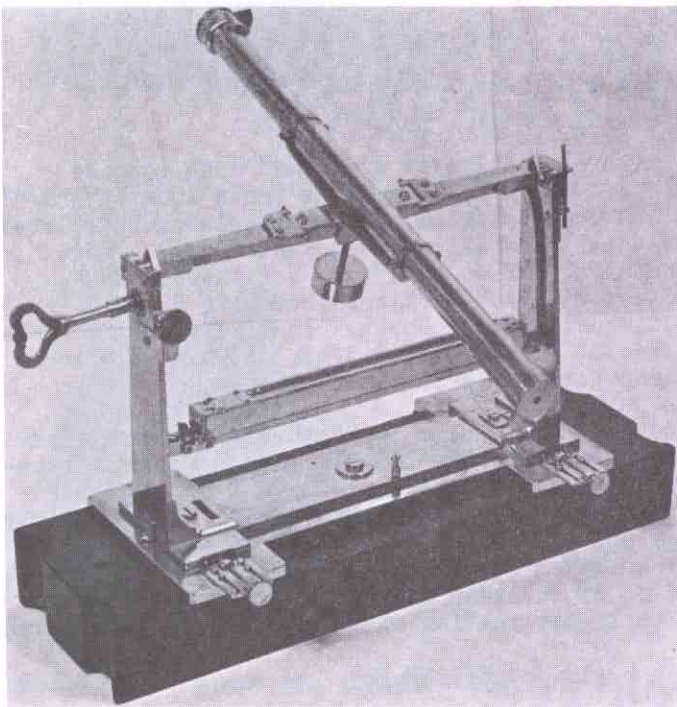
158. EARLY TRANSIT INSTRUMENT - Possibly 18th c American, unsigned. Brass instrument on 17 1/2" x 6" x 2 1/4" thk wooden base. "I" shaped bottom plate 13 1/2" long, 6 1/8" w, hand filed out of 1/4" brass plate. Cast and machined trunnions 7 1/2" h with 12" separation. Telescope 7/8" d, 16 1/2" long contains non-achromatic optics, the single element eyepiece yielding an inverted image. Adj telescope counterwt 1 1/2" d, 5/8" h. The removable lateral bubble level 10 1/4" long, the bubble tube having been formed from st wall tubing with drawn seals at either end. Scribed center lines indicate that this was a non-production item - maybe unique. A great number of and, at times, rather unusual, adjustments have been built into this instrument. Some small minor pieces missing, still very fine overall condition.

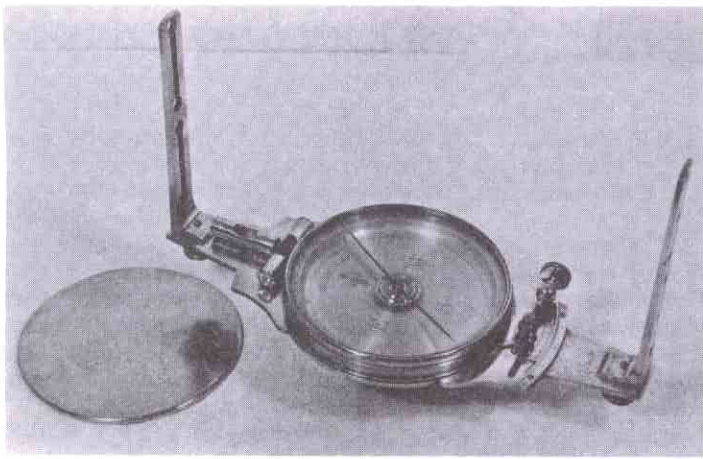
It is often difficult to prove that an instrument such as this is of American origin as it is unsigned. However design details, many not found on English instruments of the period, certainly point in this direction. The optics and bubble level point to a limited glass technology. The quality of workmanship is extremely high but the design aspects suggest an attempt to vaguely duplicate an English design without full comprehension of the associated engineering. There is too much adjustment. There is absolutely no need for the flexible suspension of the telescope mount to the cross axis. The longitudinal adjustment at the top end of the left trunion duplicates that at the base. Compare

this item with the Equal Altitude Instrument of pgs. 38 and 39 of Wheatland which has been attributed to John Bird. The maker of the instrument offered here just did not have access to the machines, and possibly lacked the techniques needed to produce a full English design. This is probably a unique item.

(30 pounds UP, Air Freight)

\$ 650

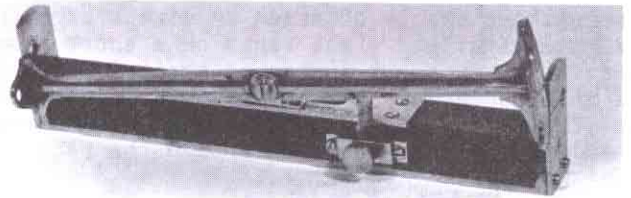




159. FINE VERNIER SURVEYOR'S COMPASS - American, c. 1865, signed "W. & L. E. Gurley/Troy, N. Y.". All brass, 6 $\frac{1}{2}$ " d silvered compass dial with 5 $\frac{3}{4}$ " needle, base 15 $\frac{1}{2}$ " long, crossed bubble levels, screw-on sight vanes 7 $\frac{1}{2}$ " h, 7" d brass compass cover. Overall ht 10". External 1 arcmin vernier for setting in the magnetic variation. Original dovetailed mahogany case 16 $\frac{1}{2}$ " long, 8 $\frac{1}{4}$ " w, 4" h in poor condition; the compass is very fine.

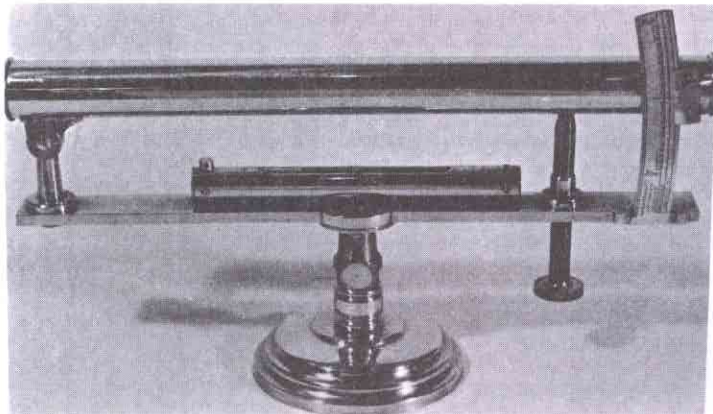
The 1873 Gurley catalog pictures this form of instrument in the 4" needle size for, by 1873, the variation arc was within the compass circle on the larger, 5" and 6" needle compasses. Thus the compass here is of earlier origin. According to the catalog "the superiority of the vernier over the plain compass consists in its adaptation to the retracing of the lines of an old survey, and to the surveys of the U. S. public lands, where the lines are based on a true meridian.

(18 lbs UP, Air Freight) \$ 265



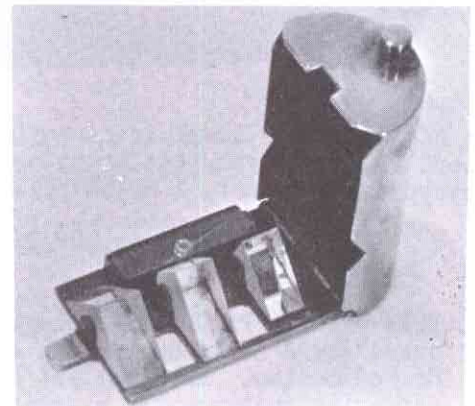
160. SURVEYOR'S BEAM LEVEL - English, c. 1835, marked "Webster's Improved/Beam Level/G. Cox, 128 Holborn Hill, London". A fine instrument in walnut and brass 12" long with fixed brass sight vanes 1 $\frac{1}{8}$ " w by 2 $\frac{3}{4}$ " h at either end of 1 $\frac{1}{8}$ " sq walnut bar; brass plate with 2 $\frac{3}{4}$ " long bubble level inlet into walnut bar, and 11 $\frac{3}{4}$ " long brass rack and pinion drive elevation sight arm with readout scale calibrated Rise or Fall in "Inches in the Yard". Brass bottom plate with threaded hole for staff mounting. In fine condition. Original storage case 12 $\frac{3}{4}$ " long, 2 $\frac{1}{2}$ " w, 3 $\frac{1}{2}$ " h in very good condition for pine. Taylor 2 places George Cox at the above address during the period c. 1830-6 but provides little more. The Webster referred to may be the Henry Webster of London listed by Goodison. The history of this rather attractive instrument will have to await further study.

(6 pounds, UP,PS) \$ 105



161. PATENT SURVEYOR'S LEVEL - Scottish, c. 1850, marked on the silvered elevation scale, "GARDNER & CO./21 BUCHANAN ST./GLASGOW/REGISTERED/No. 2602 DEC: 28th. 1850" and the serial no. "117" may be found on the bottom rear of the same scale. Overall length 13", ht 6" (not counting later display stand). Bubble level 6 $\frac{1}{4}$ " long and silvered Rise-Fall scale 3 $\frac{1}{4}$ " w by 4" long. Telescope tube 1 $\frac{1}{8}$ " d, 13" long, with draw tube eyepiece focus. All brass and in excellent condition. Display stand included. Original dovetailed pine box 14" long, 6 $\frac{1}{4}$ " w, 2 $\frac{1}{2}$ " h, in good condition. An unusual instrument by a long recognized firm.

(9 pounds, UP,PS) \$ 175



162. UNUSUAL POCKET INSTRUMENT - English, c. 1900, marked "Weldon Range Finder". Brass half cylinder, when closed 1 $\frac{3}{4}$ " d, 2 $\frac{3}{4}$ " long. Opens to show 3 prisms and a tiny box compass (3/8" sq, 1 $\frac{1}{2}$ " long) mounted on inside of flat side. On the outside, under each prism, are engraved 90°, 88° 51' 15", 74° 53' 15" indicating the apex angle of each prism. Original leather case 3 $\frac{1}{2}$ " h, 2 $\frac{1}{4}$ " w, 1 $\frac{3}{4}$ " thk. Both in very fine condition. I am stopped. This is clearly some sort of pocket surveying instrument. However I cannot determine how it was intended to be used, and with no moving parts or readouts, its application as a rangefinder eludes me. A perfect item for the clever collector.

(2 pounds, UP,PS) \$ 85



163. INSTRUMENT MAKING IN CANADA - Surveyor's pocket compass signed "Potter, Toronto, C. W." and dating between 1841 and 1867. Brass compass 3 3/8" d with 2 3/4" compass needle, silvered outer ring divided by degrees and silvered dial marked with the 8 principal points. Folding sight vanes 3 1/4" h, 5/8" w. Staff-mounting screw-flange on bottom. Original rough, turned wooden case 4" d, 1 1/2" h. Compass is in excellent condition and case is - well, rough.

This is only the 2nd signed Potter instrument known to us (the other is a microscope) and nothing has been learned about Potter (although some of our Canadian friends have tried). However, the "C. W." in the signature stands for "Canada West", the term applied to Upper Canada after the proclamation of the "Act of Union of the Canadas" in Feb. 1841. In July, 1867, after Confederation, Canada West became the present Province of Ontario.

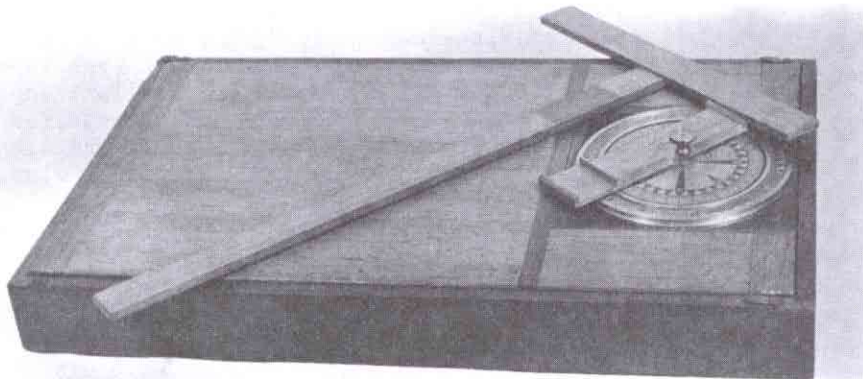
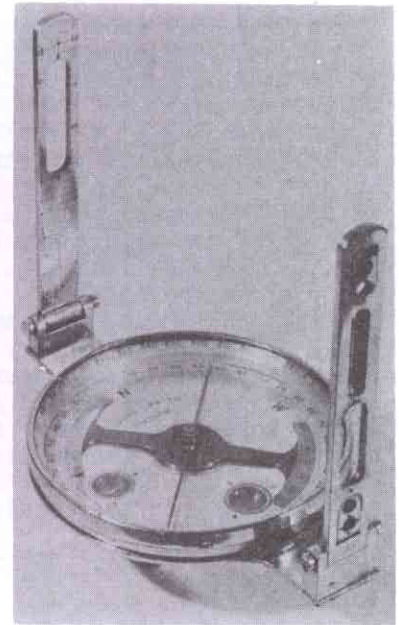
(4 lbs, UP,PS) \$ 175

164. MINING SURVEYOR'S BEARING COMPASS - Scottish, 4th qtr 19th c, dial marked "JAMES WHITE/GLASGOW". Brass compass with 6 1/2" d silvered dial, 6" compass needle and 8 1/4" h folding sight vanes located 9 3/4"

apart on compass frame. Elevation tangent scales engraved on insides of both sight vanes. With these, heights of distant objects and shaft inclinations can be obtained by direct sighting. This compass has been designed with long sight vanes on a short base just to accommodate the sharp rises in short distances typical of Scottish mines. This compass can also be used to take bearings without reference to the compass needle. The inner bar, with opposing 1 arcmin readout verniers can be locked and the compass rotated through the required azimuth angle just as with the surveyor's transit. In this country, this feature results in an instrument called the "railroad compass". Two circular bubble levels are inset into the face of the compass. Not shown is the original dovetailed mahogany case 9 1/2" w, 8" deep, 4 3/4" h. The case is sound although its surface is in rough shape; the compass is in fine condition. Quite different from the American compass, this instrument would add interest to many a good collection on this side of the Atlantic.

(14 pounds, UP,PS)

\$ 185



165. PATENTED CIRCUMFERCENTER - American, c. 1780, every piece marked "HENRY WADSWORTH, Duxbury, Mass., U. S. A./CIRCUMFERCENTER, Patented August 21, 1877". Walnut stowage box and plotting table 21 1/2" long, 13" w, 2 1/2" h; tee square 19 1/2" x 12" slides in cast bronze arm which rotates on cast bronze plate 6 1/2" d which is inset with 4 1/2" d printed compass rose (1° divisions). Wood table very good, rest fine condition. This is

one of those rare American surveying devices which have lasted but a short time. Even Smart does not record Mr. Wadsworth, the inventor of this survey field plotting board, or in his own words, "The Surveyor's Assistant, A SCIENTIFIC AND Short Hand Method To DRAW A MAP OR PLAN".

(14 pounds, UP,PS)

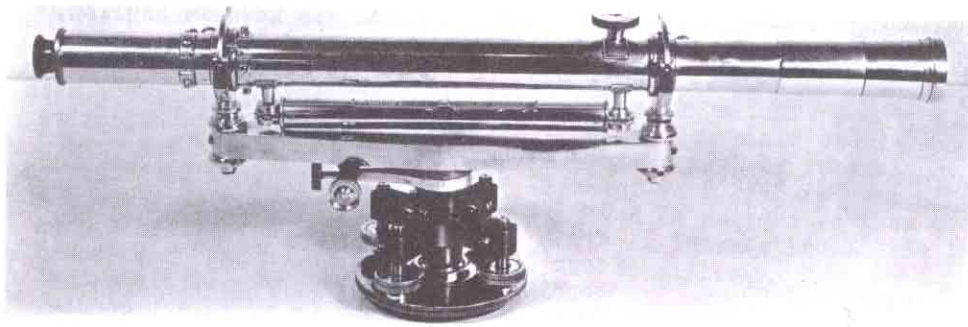
\$ 110

166. BUFF TRANSIT PLAQUE - American, early 20th c. Nickel plated brass oval plaque 4" by 3" showing typical surveyor's transit made by the Buff & Buff Mfg. Co. of Boston. An excellent display item for any collection of American surveying instruments; a necessity for the collection with any Buff & Buff instruments. Mint condition.

(1 pound, UP,PS)

\$ 25



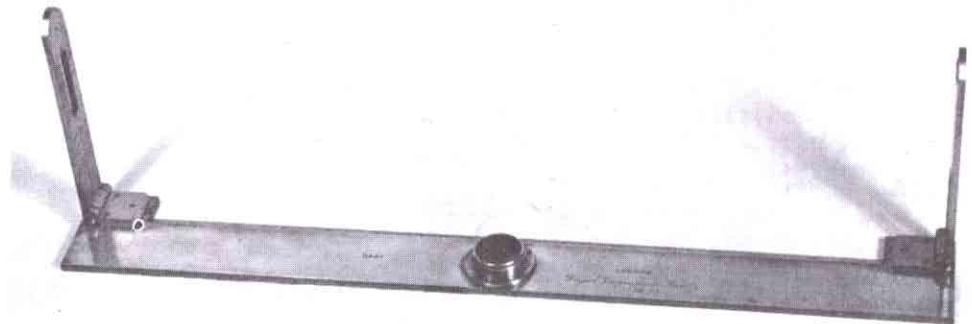


167. LONG WYE LEVEL - American, late 19th c (last patent date, Oct. 13. 91), signed "KEUFFEL & ESSER CO/NEW YORK/14882". All brass, 22" telescope with 8 $\frac{1}{2}$ " bubble level in wyes 11 $\frac{1}{2}$ " apart, overall ht 8" incl. 4 screw leveling base. Rack and pinion focussing of objective (lens replaced, all else original). No case. Fine condition. K+E, founded in 1867, first manufactured surveying instruments in 1885. They are now one of the few firms still in business out of the hundreds of the 19th c. This is a large, impressive instrument.

(20 pounds, UP,PS) \$ 185

168. SIGHT VANE PLANE TABLE ALIDADE - English, 4th qtr 19th c, signed "CARY LONDON" and Royal Geographical Society No. 13. All brass, 18 $\frac{1}{2}$ " long, 2 $\frac{3}{8}$ " w, fold-down sight vanes 5" h, circular bubble level and inch scale along beveled edge. Original mahogany case 26 $\frac{1}{2}$ " long, 3 $\frac{1}{2}$ " w, 1 3/4" h with provision for rectangular box compass (not present). Case in very good, alidade in fine condition.

This alidade came direct from the stores of the Royal Geographical Society in London. Its engraved inventory number should permit one to determine on which expedition it was taken to some remote corner of the world. A fine surveying item which may have been of great historical importance as well.



(8 pounds, UP,PS) \$ 95

169. SURVEYOR'S POCKET VERNIER COMPASS - American, c. 1875, signed "W & L. E. Gurley, Troy, N. Y.". All brass, still retaining original lacquer finish, compass 5 3/4" d, 4 $\frac{1}{2}$ " needle, folding sight vanes 4 $\frac{1}{2}$ " h. Silvered dial, with inset bubble levels 1 $\frac{1}{2}$ " long, and outer ring (divided by half degs). Outside edge of compass cylinder engraved with scale and 1 arcmin vernier for setting in the magnetic variation. Universal ball joint. All original except for tripod coupling which is a modern replacement. Original mahogany case 8" w, 6 $\frac{1}{2}$ " deep, 2" h. Also the original tripod with mahogany legs 38" long. All in very fine condition. This is another example of the fine instruments produced by probably America's best known maker of surveying instruments. In many ways it nicely compliments the other Gurley items in this and earlier catalogs.

(15 pounds, UP,PS) \$ 225

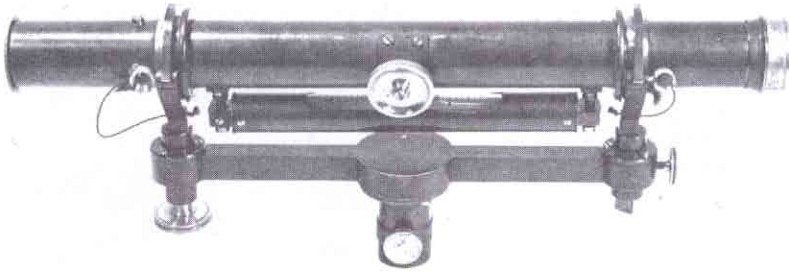
170. FANTASTIC MINIATURE SURVEYING INSTRUMENT - Austrian, by Aug. Klein, Graz, for the 1896 Deutscher Techniker-Ball in Old Vienna. Overall ht 4", elevation circle 1 $\frac{1}{2}$ " d with 1 3/4" sight tube, vertical screw adjusted bubble level clinometer, all in brass and silvered brass with wooden base. Shown without the souvenir dance card (which has been detached but is included with the item). Except for dummy bubble level, instrument completely operative (limited accuracy). Excellent condition. This is absolutely the finest, and most intricate, of these "Techniker-Ball" miniatures we have ever seen;

(2 pounds, UP,PS)

\$ 125

a survival from the last days of the Hapsburg empire when an engineering society could still have its annual formal ball in one of the grand baroque palaces of old Vienna.



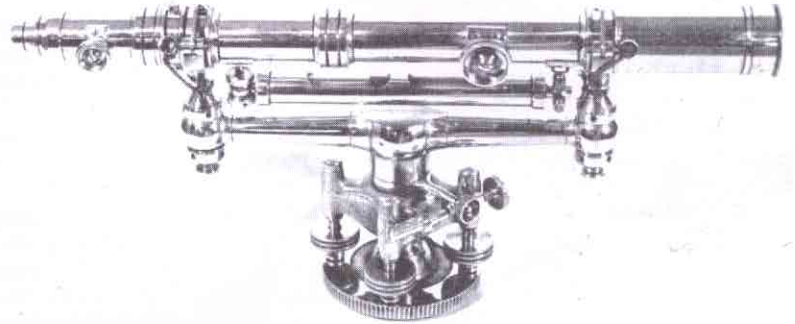


171. SUPERB W & S JONES WYE LEVEL - English, 1st half 19th c, signed "W. & S. JONES. 30 Holborn LONDON". All brass in beautiful black oxidized finish, telescope with rack and pinion focussing 1" d objective 12 $\frac{1}{2}$ " long, wyes on 8 $\frac{1}{2}$ " separation, overall ht 4 $\frac{3}{4}$ ". Bubble level 5 $\frac{1}{2}$ " long and instrument adj by one wye with vertical drive screw. Original dovetailed wooden case 13 $\frac{1}{2}$ " long, 5 $\frac{1}{2}$ " w, 2 $\frac{3}{4}$ " h in sound condition but covered by multiple paint layers; instrument in excellent condition.

W. & S. Jones, in business from 1785, moved to 30 Holborn in 1802. Goodison notes that William and Samuel succeeded their father John Jones (1739-87), purchased the stock, library and copyrights of George Adams, Jr. in 1795 and "remained well known as one of the leading and most prosperous firms in the instrument making industry for most of the nineteenth century.

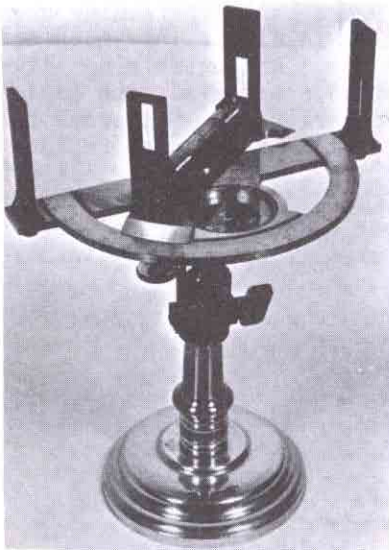
(8 pounds, UP,PS) \$ 185

172. FINE 19 INCH WYE LEVEL - American, early 20th c, signed "W. & L. E. GURLEY/TROY, N. Y.". All brass construction. Rack and pinion eyepiece and objective lens focusing; 7 $\frac{1}{2}$ " long bubble level; overall ht 8 $\frac{1}{2}$ ". 4 screw leveling base with spring loaded azimuth tangent screw. Eyepiece cap, a modern restoration, all else original. No case. Display condition.



The design of the Gurley Wye level possibly represents the American surveying instrument in its most unique and beautiful form. Established under their present name by the Gurley brothers in 1852, this firm has produced an extraordinary line of instruments over the years.

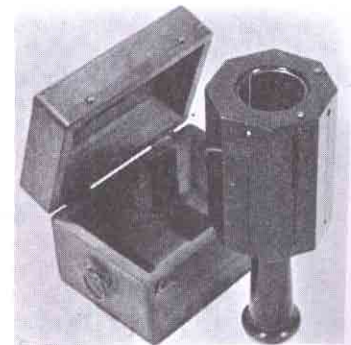
(20 pounds, UP,PS) \$ 180



173. A BEAUTIFUL GRAPHOMETRE - Either English or French for the English market, 2nd half 19th c, unsigned. All brass in black oxidized and bright lacquered finish with silvered scales, overall ht 8", fixed sight vanes 6 $\frac{3}{4}$ " apart, rotating ones, 4". Readout circle 5" d with arcmin verniers, 2 $\frac{3}{4}$ " bubble level, inset compass 1 $\frac{1}{2}$ " d, 1 $\frac{1}{8}$ " needle, English compass directions. Ball joint staff mounting with locking azimuth rotation. Original oak case 9" h, 5 $\frac{1}{2}$ " w, 6 $\frac{1}{2}$ " deep. Case in fine, graphometre in perfect, mint condition. This form of instrument has been quite popular on the continent although much less so in English speaking lands, and practically unknown here. *

(10 pounds UP, Air Freight) \$ 265

174. OCTAGONAL FORM SURVEYOR'S CROSS - English, c. 1875, signed "M. ASH, 4 BULL ST. BIRMINGHAM". All brass in original black finish, 6 $\frac{1}{2}$ " h, mounting post unscrews and then is placed in body of instrument for stowage in 4 $\frac{1}{2}$ " x 3" sq walnut box. Box and instrument in fine condition. Sight slits on every face so that 45° as well as 90° corners



(* display base not included)

may be set up on divided land. Goodison places Moses Ash at 75 Dale End, Birmingham in 1860 which suggests that this instrument is of later origin.

(4 pounds, UP,PS) \$ 40

IS THE ITEM YOU WANT STILL AVAILABLE ?
It may be. Why not call or write and find out? An interest in instruments is very much an individualistic pursuit. Often an item is almost uniquely suited to but one person.