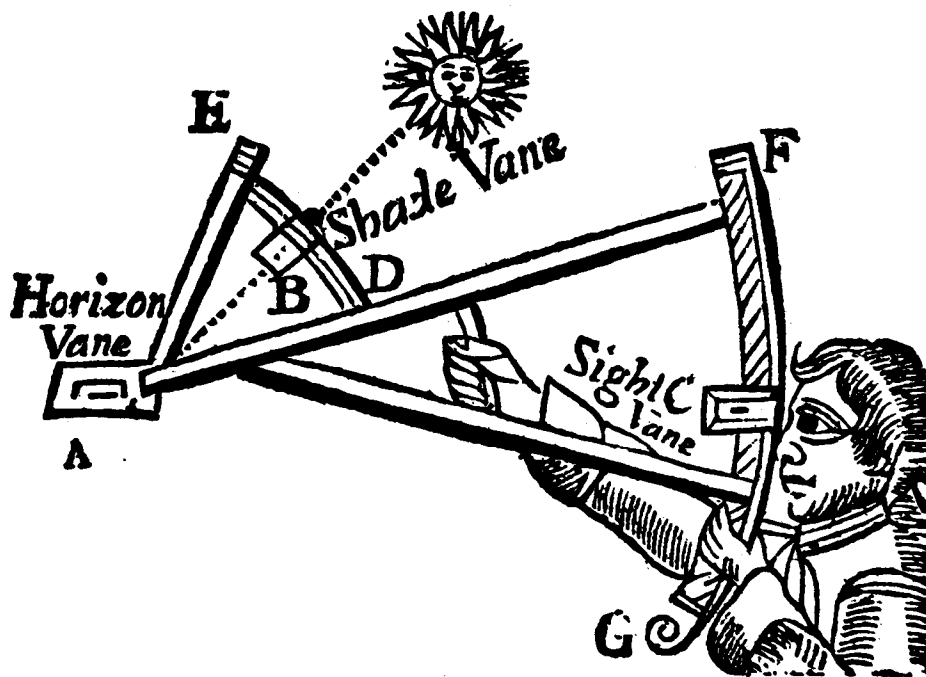


# Historical Technology

Catalog 104



SAUL MOSKOWITZ INSTRUMENT ENGINEERING

6 MUGFORD STREET MARBLEHEAD, MASSACHUSETTS 01945

(617) 631-2275

23. "CONNOISSANCE DES TEMPS À L'USAGE DES ASTRONOMES ET DES NAVIGATEURS," AVEC DES ADDITIONS, Pour l'Année commune 1793", M. Méchain, Paris, 1791. 404 pages. Original board covers with leather back 7 $\frac{1}{4}$ "h by 4  $\frac{3}{4}$ " w, in very good condition (excellent for old board covers) and excellent interior (except for pencil scrawls on rear fly leaf). The French "nautical almanac" predates the first English one of 1765 and this edition is a fine example of why it continued to be published and used (even by English navigators) for many years. (In French) (postpaid) \$ 30
24. James Little, "AN EXPLANATION OF THE METHOD OF ADJUSTMENT OF THE BACK HORIZON GLASS OF HADLEY'S QUADRANT BY TWO NEAR OBJECTS", published by Royal Irish Academy, Dublin in 1815 from paper read Jan 28th 1811 and bound as a separate volume 11"h by 9"w, of 29 pages plus copperplate engraving together with 2 mathematical papers of another 8 pages. Of particular interest to the student and collector of nautical instruments. (postpaid) \$ 22
25. Andrew Mackay, "THE COMPLETE NAVIGATOR: or, An Easy and Familiar Guide to the Theory and Practice of NAVIGATION", FIRST EDITION, T. N. Longman and O. Rees, London, 1804. Original full leather binding 8 $\frac{1}{2}$ "h by 5 $\frac{1}{2}$ "w, covers cracked at hinges but still tight and one crack along spine. Book complete and in excellent condition except for binding as noted. This is the first edition of the English equivalent of Bowditch's Navigator. That is, it is the first major updating, correction and improvement to the various 18th century English books (Atkinsor, Moore, etc.) which had become replete with errors as well as inadequate in terms of new ideas and methods. In many respects this book was as important to English Navigation as Bowditch was to American Navigation. (postpaid) \$ 55
26. Archibald Patoun, "A COMPLEAT TREATISE OF PRACTICAL NAVIGATION, Demonstrated from its FIRST PRINCIPLES:" FIRST EDITION, R. Willock, London, 1730. Modern rebinding in full leather 8 $\frac{1}{4}$ "h by 5"w, 524 pages in total including tables, many woodcut illustrations within the text. This is the first edition of a book published through at least 7 more editions and obviously highly regarded in its time. Such a book is of particular interest in that it dates from just before the invention of Hadley's quadrant and all the subsequent great advances in navigation. In great condition for a book 240 years old which saw many years of service at sea. (postpaid) \$ 98
27. Archibald Patoun, " COMPLETE TREATISE OF PRACTICAL NAVIGATION ..." 7th ed, Mount and Page, London, 1765. Original leather binding showing some wear and hinge cracks 8"h by 5"w, 525 pages and the fold-out copperplate opposite p.262. Generally in fine condition with many pages heavily annotated adding to its interest. One may wish to compare this edition with the above, particularly because the year 1765 also saw the initial publication of the English nautical almanac. (postpaid) \$ 50
28. C. Rand, "DESCRIPTION and USE of the PATENT Military and Naval Telescope, for Measuring Distances and the Extension of Objects at Sight", London, 1799. Original leather backed board covers 8 $\frac{1}{4}$ "h by 5 $\frac{1}{4}$ "w, in good condition. Contents in excellent condition. Engraved title page and 2 plates (one folding), 84 text pages. Intended to be sold with the telescope which in actuality was a micrometrical stadimeter with high magnification optics. This book should be of great interest to anyone interested in the development of precision instruments in the 18th century. It is a rather rare item as well and generally missing from most major libraries. (postpaid) \$ 45

#### SURVEYING

29. Thomas Breaks, "A COMPLETE SYSTEM OF LAND-SURVEYING. Both in THEORY and PRACTICE", T. Saint, Newcastle Upon Tyne, 1771. Original leather binding, hinge cracks but tight covers, 8"h by 5"w, 593 pages complete with the fold-out plates. Contents in fine condition. As noted in Taylor 2 "Breaks gives a detailed description of his equipment, which included an improved theodolite, furnished with telescope, spirit-level and nonnius; a plane-table with removable frame, together with its sight-rule, box and needle; a sector; a parallel rule; ...", etc. This book is particularly valuable to the collector of early surveying instruments. (postpaid) \$ 60

#### Still Possible to Put Together a Complete Set of Editions

30. Abel Flint, " A SYSTEM OF GEOMETRY AND TRIGONOMETRY TOGETHER WITH A TREATISE ON SURVEYING", 5th ed., Cooke & Co., Hartford, 1825. Original leather binding 8"h by 5"w in fine condition. 104 pages text with included woodcut diagrams and 137 pages tables. Except for some minor staining, contents in very fine condition. A highly regarded American book which continued to be published for half a century. It is still possible to acquire a set of all the editions of this book at reasonable cost. Thus for one interested in the progress of American surveying, these editions will prove of the greatest interest. (postpaid) \$ 18
31. Abel Flint, "A SYSTEM OF GEOMETRY AND TRIGONOMETRY: WITH A TREATISE ON SURVEYING, IN WHICH THE PRINCIPLES OF RECTANGULAR SURVEYING, WITHOUT PLOTTING, ARE EXPLAINED", Belknap and Hamersley, Hartford, 1844. Original leather binding 8"h by 5"w in fine condition as are the con-

tents. 160 text pages and 112 pages of tables. Although not called out on the title page, this is the 10th edition of Flint and the 3rd from last in the series. (postpaid) \$ 14

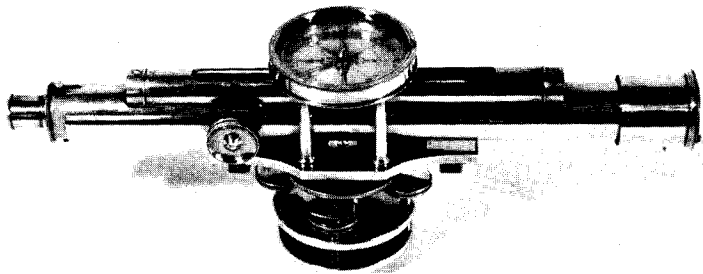
\* \* \*

32. George Grigby, "MEMOIR, CONTAINING A DESCRIPTION AND USE OF SOME INSTRUMENTS, Designed to Ascertain the Heights and Distances of Inaccessible objects, without the Necessity of Reference to Logarithmic Tables", London, 1807. Modern cloth rebinding 10 3/4"h by 8 1/2"w, 48 pages with many woodcut diagrams and engraved plates, one folds out to 15"w by 10"h. A description of a combined sighting and computational instrument; the computation by analog linkages. It is one of the most unusual and interesting surveying instruments I have ever seen. In addition, the book is in really fine condition. (postpaid) \$ 40
33. John Gummere, "A TREATISE ON SURVEYING, containing THE THEORY AND PRACTICE: To which is Prefixed a Perspicuous System of Plane Trigonometry". 14th ed, Thomas, Cowperthwait & Co., Philadelphia, 1846. Original leather binding 9"h by 5 3/4"w in very fine condition. 266 text pages, 152 pages of tables, 11 fold-out plates including one each on the Wye Level and Theodolite. An American book that continued in use for over 100 years with the 1st edition in 1814 and one noted as late as 1917. Interestingly this is the 6th printing of the 14th ed. of 1838 which followed an 8th ed. of 1837. There seems never to have been any 9th through 13th editions. A valuable and important book. (postpaid) \$ 20
34. Butler Williams, "PRACTICAL GEODESY: Comprising CHAIN SURVEYING AND THE USE OF SURVEYING INSTRUMENTS; Together with TRIGONOMETRICAL, COLONIAL, MINING, AND MARITIME SURVEYING;" J. W. Parker, London, 1842. Original leather binding 8 3/4"h by 5 1/2"w in fine condition except for small chips at top and bottom of spine. 273 pages, fold-out frontis and the large colored fold-out plate opposite p. 1. Extensive sections devoted to the description and use of English surveying instruments of the period. (postpaid) \$ 18

#### MEDICINE & SURGERY

35. John Erichsen, "THE SCIENCE AND ART OF SURGERY", improved Amer. ed. from 2nd London ed., Blanchard and Lea, Philadelphia, 1859. Full leather binding 9 1/2"h by 6 1/2"w, 996 pages with 417 illustrative woodcuts and 32 pages of advertisements. Book and binding in excellent condition. Surgery has come alive and is no longer considered as a last resort. The 1st chapter discusses the use of chloroform and ether: "The introduction of anaesthetics into surgery is undoubtedly one of the greatest boons ever conferred upon mankind." (postpaid) \$ 25
36. Robert Hooper, "THE PHYSICIAN'S VADE-MECUM: Containing the Symptoms, Causes, Diagnosis, Prognosis, and Treatment of DISEASES"; James Humphreys, Philadelphia, 1809. Original leather binding 7"h by 4 1/2"w in extremely good condition, 347 pages text in fine condition. Taken from the London edition, this was one of the important books in the establishment of medical schools and medicine in America. (postpaid) \$ 20
37. Robert Hooper, "THE LONDON DISSECTOR OR SYSTEM OF DISSECTING", 1st Amer. ed. with added Appendix from last London ed., A. Finley and W. H. Hopkins, Philadelphia, 1810. (The actual 1st Amer. ed. was published in 1809.) Full leather binding 7"h by 4 1/2"w, 325 pages. Fine condition. Originally used in England for the instruction of medical students, it was republished in America and saw similar use. (postpaid) \$ 20
38. Robert Liston, "PRACTICAL SURGERY; with One Hundred and Fifty Engravings on Wood", 2nd Amer. ed from 3rd London ed., Thomas, Cowperthwait & Co., Philadelphia, 1842. Full leather binding 9"h by 6"w, 12 page introd., 588 text pages, fine detailed woodcuts throughout. Book is complete and in excellent condition. With old signature and stamp of Alfred Wyker, M. D., University of New York Medical Department. This is a fine old book on surgery and would be a welcome edition to any good medical library. (postpaid) \$ 20
39. John Quincy, "LEXICON PHYSICO-MEDICUM: Or, A NEW MEDICAL DICTIONARY", 11th ed., T. Longman, London, 1794. Original leather binding cracked at hinges (but covers tight) and showing some wear, 8 1/2"h by 5 1/2"w, 840 pages, contents in fine condition. Probably one of the best known English medical dictionaries and in print (in various editions) throughout the 18th century. (postpaid) \$ 15
40. Ree's Cyclopaedia, SURGERY PLATES, 12 bound plates from the American Edition of 1824. Modern green cloth binding 10 3/4"h by 8 1/2"w. Taken from the most noted source for economic, technical, and scientific information at the beginning of the 19th century, and of such good quality that individual plates are being sold at \$ 5 each. Here we offer 12 plates nicely bound in book form for only a fraction of this amount. (postpaid) \$ 30
41. Joseph Townsend, "ELEMENTS OF THERAPEUTICS; OR A GUIDE TO HEALTH", 1st Amer. ed. (from the 2nd London ed.), Carlisle, Boston, 1802. Full leather binding 8 1/2"h by 5 1/2"w showing wear,

## Surveying in England & America



133. TROUGHTON'S IMPROVED LEVEL - English, c. 1835-40, signed "Troughton & Simms LONDON". All brass, 15" long, 6"h, including 4 screw leveling base. Rack focusing eyepiece back with interchangeable direct and right angle eyepieces. 9½" long bubble level built into telescope body. 3¼" dia compass supported above telescope by 4 turned tapered columns. Compass needle may be replacement; overall condition excellent. Original dovetailed mahogany case 19½" long, 4½"w, 4"h with the usual age cracks

and minor warping, but still in fine condition.

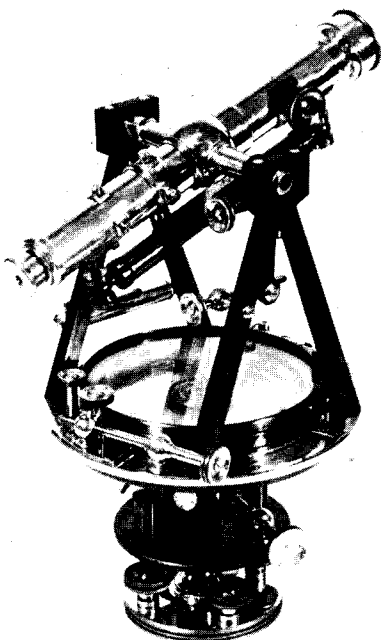
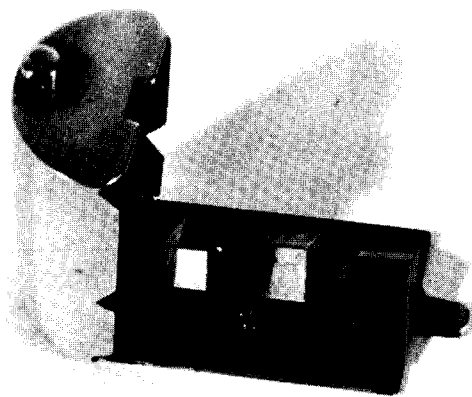
Frederick W. Simms (not the maker of this instrument) writes in his "A Treatise on the Principal Mathematical Instruments, etc." of 1834, "This modification of the instrument has a very decided advantage over the Y level, inasmuch, as in its construction it is more compact, and the adjustments once made are less liable to be deranged; ...". With the death (in 1800) of Jesse Ramsden, Edward Troughton was regarded as England's leading instrument maker. In 1826 he took William Simms in as a partner to form the firm which produced the instrument offered here.

(14 pounds, UP,REA) \$ 225

134. UNUSUAL POCKET INSTRUMENT - English, c. 1900, marked "Weldon Range Finder". Brass half cylinder, when closed 1 3/4" dia, 2 3/4" long. Opens to show 3 prisms and a tiny box compass (3/8" sq, 1½" 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 3½"h, 2¼"w, 1 3/4" thick. 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



135. LARC GURLEY TRANSIT - American, 4th quarter 19th cent, signed "W. & L.E. Gurley, Troy, N. Y." and "F. W. Lincoln, Jr. & Co. Agents, Boston, Mass.". All brass, in bright and black oxidized finish, overall ht 13" including 4 screw leveling base. Silvered scales and 5 3/4" dia compass face, the latter with internal scale and vernier for the variation. 5" long needle. 8" dia base plate. Telescope 11" long, with rack and pinion focusing objective and 6" bubble level. Orthogonal bubble levels on frame. 7" dia azimuth scale reads by opposing verniers to 1 arc-min. Tangent screws on elevation and azimuth motions. This instrument is in unusually fine display condition. (No case.)

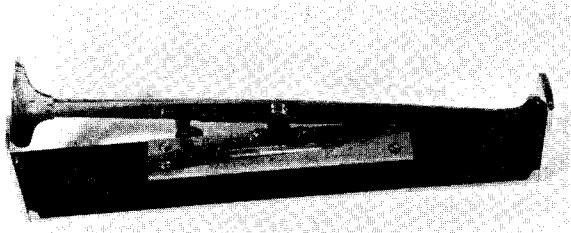
The W. & L.E. Gurley Co., (originally Phelps and Gurleys till 1852) has continued to make instruments with a certain simple elegance as typified by this transit and the wye level elsewhere in this catalog. It seems to be a question of the shapes and proportions of the individual parts as well as the general utilitarian design. I am of the opinion that American instruments such as this bear the same relation to foreign instruments as did our great steam locomotives to those of other nations. There was a time when we had a finesse with mechanical objects which was equalled nowhere else.

(22 pounds, UP,REA)

\$ 255

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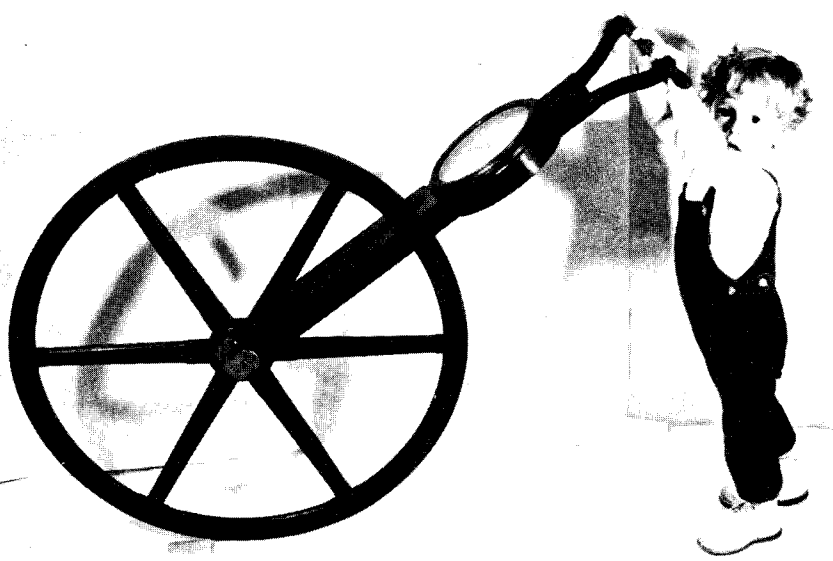


136. SURVEYOR'S BEAM LEVEL - English, c. 1835, marked "Webster's Improved/Beam Level/G. Cox, 128 Holborn Hill, London". A fine instrument in walnut and brass 12" long with fixed brass sight vanes 1 1/8" w by 2 3/4" h at either end of 1 1/8" sq walnut bar; brass plate with 2 3/4" long bubble level inlet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

(6 pounds, UP,PS) \$ 98

for pine. Taylor 2 places George Cox at the 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.

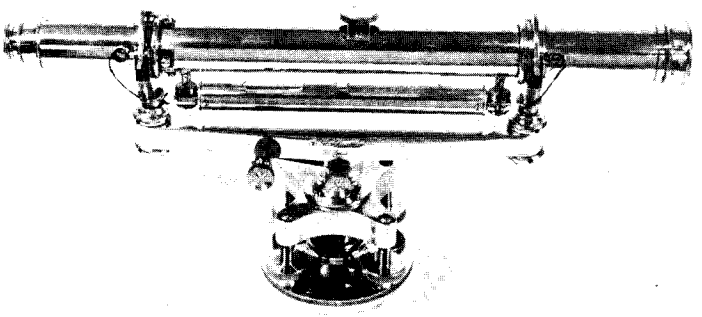
137. A RARE & IMPORTANT WAYWISER - English, before 1773, signed "Made by Heath & Wing/Instrument Makers to his/MAJESTY'S Board of Work's London". Iron bound 6 spoke mahogany wheel 31 1/2" dia with mahogany frame 36" long. Brass readout dial 7 1/2" dia with two blued steel hands for reading out yards and miles; outer bezel 9 1/2" dia. Handle 20" across. The bezel is a modern restoration as is the fast (yards) dial hand. The handle may be an early replacement because it does not match that of the waywiser in the London Science Museum. All else is original and completely operative. Excellent condition.



The description opposite the picture in the Science Museum booklet "SURVEYING Instruments and Methods" reads (in part) "...the waywiser, perambulator, or surveyor's wheel was much in vogue among surveyors of the second half of the eighteenth century and the early years of the nineteenth century, ...The instrument was trundled along the route to be measured and the distance traversed, the number of revolutions multiplied by the circumference of the wheel, was expressed in miles, furlongs, poles and yards by readings of the outer and inner dials mounted just below the handles." Goodison notes that the partnership of Thomas Heath and Tycho wing (fl 1740-73) was dissolved after Heath's death in 1773 when wing retired. Taylor 2 writes "Thomas Heath was already known in 1714 and became one of the most notable instrument-makers of the first half of the eighteenth century. In middle age he took as a partner the younger Tycho wing, ...". An instrument such as this does not become available too often.

(REA or Air Freight)

\$ 760

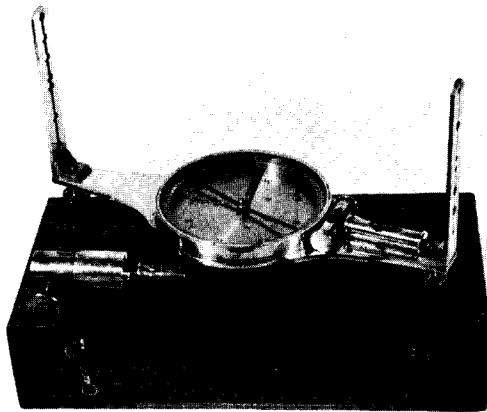


138. ALOE WYE LEVEL - American, 4th quarter 19th cent, signed "A. S. Aloe Co./St. Louis/9226". All brass; telescope 18" long, 7 1/2" leveling bubble, 10" between wyes, and 9" overall ht. including 4 screw leveling base. Rack and pinion focusing of objective lens. Typical Aloe tangent screw operating between wye level frame and leveling base. Original mahogany field case 22" long, 6" w, 10" h (in rough shape) Instrument in very fine condition.

According to Smart (Am. Survey.) the company was founded in 1860 by Albert S. Aloe (1842-1893). "For many years, Aloe bought surveying instruments of Gurley. Later they bought them of Wissler of St. Louis, Mo. They were usually engraved A. S. Aloe." Because of the fire of 1912 which destroyed all their records it is not possible to be more specific than to point out that this instrument shows no Gurley characteristics. rather fine locking instrument.

(24 pounds, UP,PS)

\$ 165



139. EARLY DAVIS SURVEYOR'S COMPASS - American, 2nd quarter 19th cent, signed "w. C. Davis New York". All brass, 4 3/4" dia compass with 4" needle on a 12" long frame. Silvered compass dial and outer ring, the latter divided by half degrees. 5 1/4" h sight vanes. Crossed bubble levels. Complete with ball joint fitting for staff mounting. Original dovetailed mahogany case 13" long, 6 1/2" w, 3" h. Compass and case in very fine condition.

Smart (Am. Survey.) states that William C. Davis was listed in the New York City directories from 1835 to 1879, first at 36 Oak, ending at 302 Pearl Street. The Gurley Museum contains a similar instrument by him, the same size as this one and also so signed. A nice example of American instrument making.

(11 pounds, UP,PS)

\$ 225

140. GURLEY POCKET COMPASS - American, c. 1870, dial face inscribed "w. & L. E. GURLEY, TROY, N. Y. ". white dial 3" dia, needle 2 1/2" long. Dial reads from 0 to 90 to 0 in both directions by 1° divisions. Mahogany case 3 3/4" sq by 1" h. This is a fine little compass and is representative of a form of instrument in production by several of the American surveying instrument companies.

(2 pounds, UP,PS)

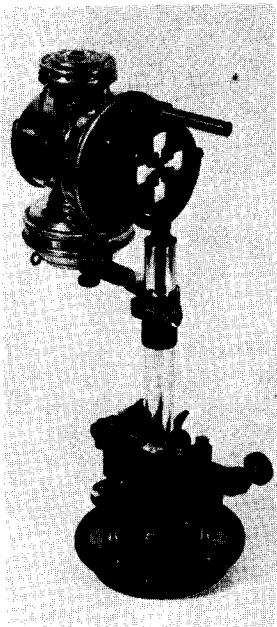
\$ 70



141. SURVEYOR'S TUNNEL TARGET - American, early 20th cent, signed "Buff & Buff Mfg. Co./Boston". Overall ht 13 1/2". Brass construction in bright and black oxidized finish, nickel plated oil lamp. Full 4 screw leveling base with azimuth tangent screw and crossed bubble levels. In excellent, almost mint, condition, having been on a shelf, unused, for a half century. The Buff and Buff catalog of 1914 describes this "Lamp Target for Mine Use" pointing out they can be interchanged with a #2 transit without disturbing the tripod. In 1914 dollars they cost \$ 90 with a tripod. An interesting and little known surveying item.

(10 pounds, UP,PS)

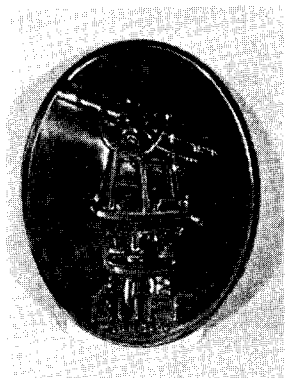
\$ 95



142. BUFF TRANSIT PLAQUE - American, early 20th cent. 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 by Buff & Buff. Mint condition.

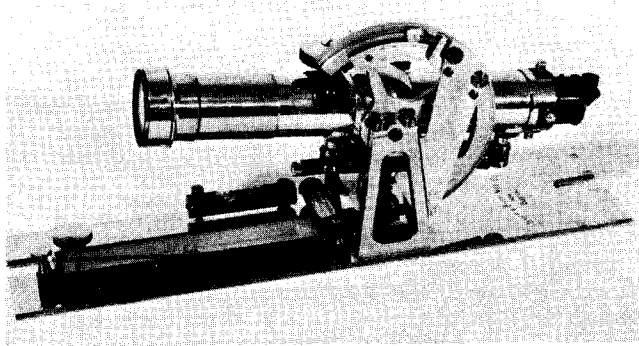
(1 pound, UP,PS)

\$ 25



143. EXPLORER'S PLAIN TABLE ALI-DADE - American, 1st part 20th cent, marked "BUFF & BUFF MFG. CO./17454/BOSTON".

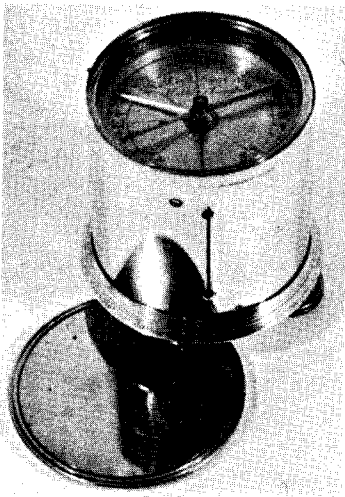
Brass in bright and black oxidized finish 4 5/8" h on 12" by 3" base. Rack and pinion focusing telescope 9" long with rt. angle eyepiece. Crossed 2" bubble levels and 5" long accessory box compass (cost \$ 20 extra in 1918) on base, 3" bubble level under telescope. 4" dia silvered elevation scale reads out by vernier to 1 arcmin. This instrument was used in the field for the direct plotting of maps as sightings were obtained. An elegant little instrument in extra fine condition. (No case)



The Buff & Buff Co. of Jamaica Plain, Boston, Mass. (still producing high quality surveying instruments) was founded in 1898 by George C. Buff (1837-1923) after the dissolution of the firm of Buff & Berger (which was founded in 1871).

(8 pounds, UP,PS)

\$ 165



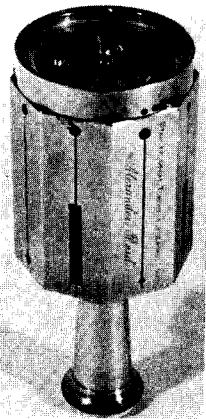
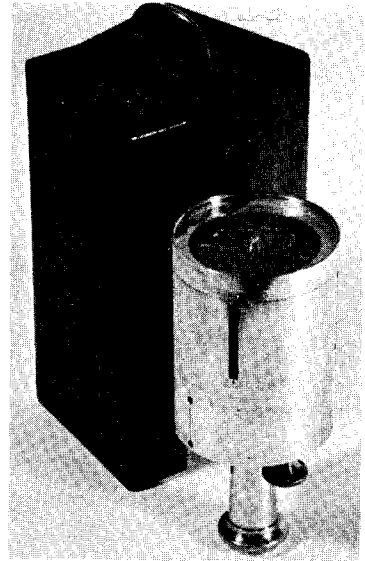
144. EARLY IMPROVED SURVEYOR'S CROSS - English, c. 1805 - 1C, signed on the silvered compass dial "W. & S. Jones/30 Holborn London". Brass cylinder 2 3/3" dia, 2 3/4" h with silvered bevel readout scale 3" dia and vernier reading to 3 arcmin. Azimuth drive knob on bottom of cylinder. Compass needle 2 1/8" long. Brass cap 3" dia, overall ht 3 1/2". Extremely fine condition. (No case.)

Rees' Cyclopaedia of 1800-19 describes this instrument as a surveying cross in cylindrical form as improved by W(illiam) Jones, elder partner in the firm W. & S. Jones, London (in business from 1784). They moved to 30 Holborn in 1802. According to Rees', "where no great accuracy is required, this small pocket instrument unites the advantages of a cross, circumferentor, and small theodolite." This, the earliest form of the Jones Improved Cross, the one illustrated in the Rees' Surveying plates, is of great importance in the history of surveying instruments, yet quite rare and not normally available.

(5 pounds, UP,PS) \$ 185

145. LATER IMPROVED SURVEYOR'S CROSS - English, c. 1875, unsigned, but possibly by Stanley, Great Turnstile London for the French market (black enamel compass face marked with "O" for west). Brass cylinder 3" dia, 4" h on staff mounting post giving 7" overall ht. Compass needle 2 1/4" long, a modern replacement. Silvered compass outer ring divided by degrees. Lower portion of cylinder (with its own sight slits which the earlier improved cross lacked), rotates with respect to the upper. Inset silver azimuth scale with vernier reads to 1 arcmin. Right-angled sight slits in upper portion of cylinder. Original walnut case 8" h by 4" sq. Both instrument and case in excellent condition. A nice example of the changes which evolved in this form of instrument.

(7 pounds, UP,PS) \$ 145



146. SIMPLE SURVEYOR'S CROSS - English, 2nd half 19th cent, marked "STANLEY, GREAT TURNSTILE, HOLBORN, LONDON" and engraved in script "Alexander Reid", probably the 1st owner. 2 1/4" dia compass mounted on octagonal cylinder 3" h, 2 3/8" across the flats. Overall ht 6 1/4" with staff mounting post. Sight slits on every face so that 45° as well as 90° corners may be set up. No azimuth scale. Black face compass dial with silvered outer ring, needle 1 3/4" long. No case. In excellent condition. This simpler form of compact surveyor's cross predates the Jones design, but seems to have been made for as long as the more complicated instrument.

(4 pounds, UP,PS) \$ 80

147. THE BEST OF THE NEW YORK SURVEYOR'S COMPASSES - American, c. 1850, signed "B. Pike & Sons, 166, Broadway, N-Y". This very large brass surveyor's vernier compass has a 6 3/4" dia compass (5 3/4" needle) on a 16" long frame (quite unusual). Sight vanes 7 1/2" h. Crossed bubble levels. External vernier to set in variation to 1 arcmin. Silvered compass dial and outer ring (divided to half degs). 7" dia brass compass cover. Universal ball joint. Original lacquer finish. Not shown is the original mahogany tripod with 57" legs. The original plumb bob too. Unusually fine mahogany case 16 3/4" long 8 1/4" w, 4" h. Tripod in fine and case and compass in very fine condition.

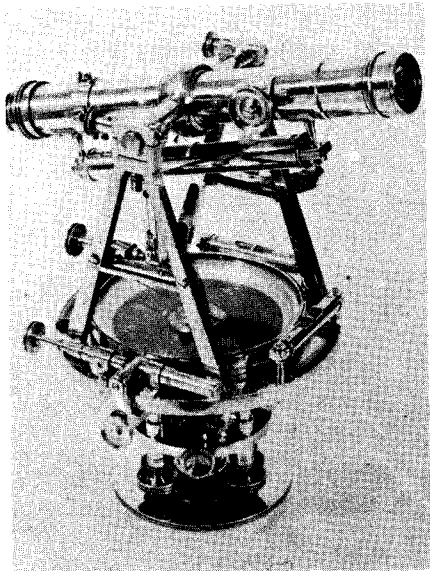
Benjamin Pike, Sr. (1777-1863) and his sons Benjamin Jr., Daniel, & Gardiner, were probably the best known of all the New York City instrument makers and dealers. B. Pike & Sons was at 166 B'way from 1841-54, thus allowing an exact dating of this instrument. This is about the most desirable of their instruments being unusually large and having its original tripod as well. Even the case is exceptional.

(2 packages, 19 and 12 pounds, UP, REA)

\$ 260







148. A TRANSIT FROM PHILADELPHIA - American, c.1890-5, signed "Heller & Brightly/Makers Philad." and the serial no. "7076". All brass 12 $\frac{1}{2}$ " h, base plate 7 $\frac{1}{2}$ " dia with 6 $\frac{1}{2}$ " dia azimuth scale (1 arcmin vernier) 5 $\frac{1}{2}$ " dia black compass face with silvered outer ring and 5" needle, crossed 2 $\frac{1}{2}$ " bubble levels, inset silver elevation scale of 3  $\frac{3}{8}$ " rad and 1 arcmin vernier. Telescope 11 $\frac{1}{2}$ " long with rack focusing objective and 6 $\frac{1}{4}$ " bubble level. Original mahogany field case 13 $\frac{1}{2}$ " by 9" by 13" h, in rough shape. Transit, however, is in extremely fine condition.

Charles S. Heller (1839-1912) had been working for William Young for 15 years when Young died in 1870. Then he and Charles J. Brightly (1816-1897) joined in partnership. After Brightly's death, Heller continued the business under the original name which was retained even after his own death in 1912.

(28 pounds UP,PEA)

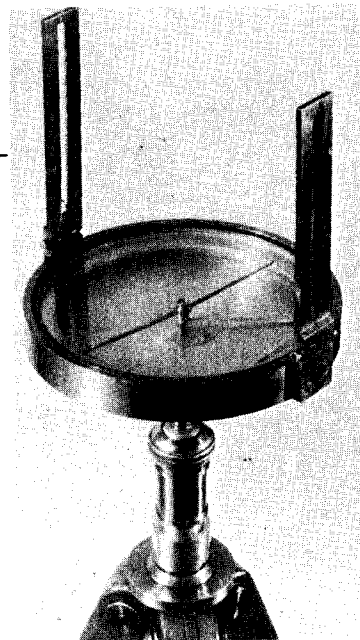
\$ 245

149. 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  $\frac{3}{4}$ " dia, 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 36" 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 complements the other Gurley items in this and earlier catalogs.

(15 pounds, UP, PS)

\$ 210

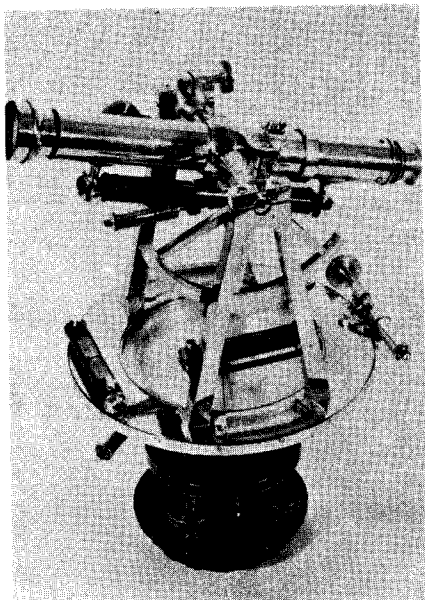


150. A FINE K + E TRANSIT - American, c.1890, "KEUFFEL & ESSER/MAKERS/714/NEW YORK". All brass in bright and black oxidized finish, 12 $\frac{1}{2}$ " overall ht including 4 screw leveling base. Base plate 7 $\frac{1}{2}$ " dia with 6 $\frac{1}{2}$ " dia silver azimuth circle with 1 arcmin vernier and 5" dia silvered compass face with 4 $\frac{1}{2}$ " needle, outer ring divided to half degs. Inset silver elevation scale 2  $\frac{7}{8}$ " rad, 1 arcmin vernier. Telescope 10 $\frac{1}{2}$ " long, rack focusing objective and 5 $\frac{1}{4}$ " bubble level. Crossed 3 $\frac{1}{4}$ " bubble levels on frame. Extremely fine overall condition.

Keuffel & Esser was founded in 1867 by Wilhelm J.D. Keuffel (1838-1908) and Herman Esser (1845-1908); first manufactured surveying instruments in 1885. They also produce a range of drafting and engineering equipment and supplies and are well known for the quality of their products.

(18 pounds, UP, REA)

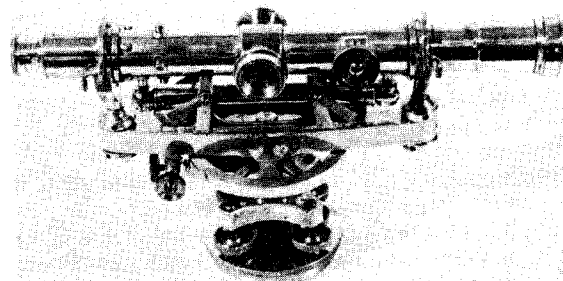
\$ 245



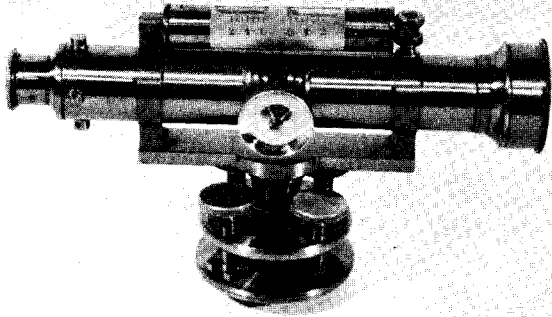
151. COMBINATION WYE LEVEL-THEODOLITE - American, early 20th cent, unsigned, but similar to some of the Alce instruments. In brass; telescope 12 $\frac{1}{2}$ " long with rack & pinion focusing, wye level base 8" long, 5" bubble level, 6  $\frac{3}{4}$ " overall ht. 4" dia silvered azimuth circle reads by vernier to 5 arcmin. Shown in wye level configuration. May be used in theodolite mode by lifting telescope out of wyes, turning it crosswise to base and clamping in simple standards on the inner part of base. One wye a replacement, all else original. Fine overall condition. This may be a reproduction model of an interesting 20th century version of the universal surveying instrument.

(10 pounds, UP, PS)

\$ 98



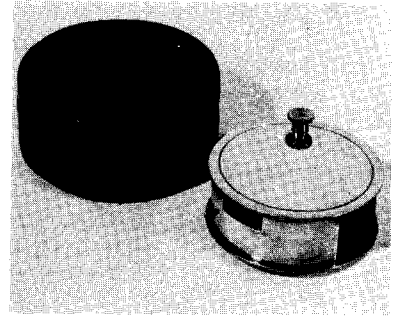




152. A LITTLE JEWEL - English, c. 1900, unsigned but possibly by Stanley of Great Turnstile, London. A miniature all brass surveyor's level in a green-black oxidized finish only 8" long and 5"h. Bubble level, with silvered scale, 3 $\frac{1}{4}$ " long. Rack and pinion focusing objective. Typical English 4 screw leveling base quite similar to the one on the Troughton & Simms level in this catalog. Just about perfect condition. Original mahogany case 9" long, 6"w, 3 $\frac{1}{4}$ "h contains adjustment tool and even original plumb bob. Case is in fine condition. For the collector of the exceptional instrument.

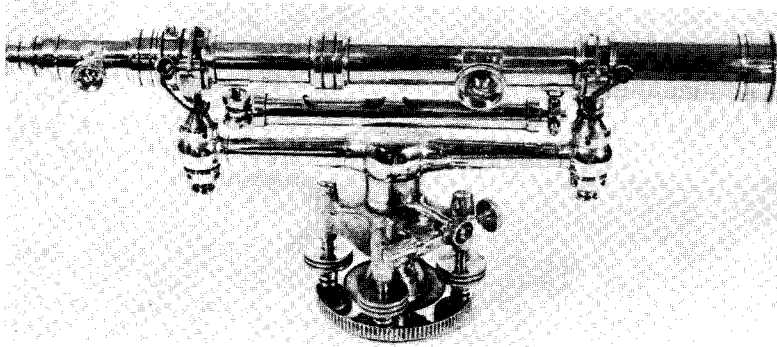
(7 pounds, UP,PS) \$ 165

153. SURVEYOR'S OPTICAL SQUARE - English, mid 19th cent, unsigned. Brass pocket sextant like instrument 2 $\frac{1}{2}$ " dia, 1"h in original leather case 3" dia by



1 $\frac{1}{2}$ "h. The instrument consists of a peep sight, an index mirror set for a 90° angle (with a 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 very minor scuffing, and the optical square is in excellent condition.

(3 pounds, UP,PS) \$ 65



154. FINE 19 INCH WYE LEVEL - American, early 20th cent, 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. 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.

(18 pounds, UP,PS)

\$ 175

155. A BOSTON MADE SURVEYOR'S COMPASS - American, 2nd quarter 19th cent, signed "S. Thaxter & Son Boston". All brass with 6" dia compass, 5" long needle on 14 $\frac{1}{2}$ " long frame. Silvered compass dial and outer ring (divided by half degrees). Crossed bubble levels. 6 3/8"h sight vanes. Universal ball joint for jacobs staff mounting. Original dark walnut dovetailed case 15 $\frac{1}{2}$ " long, 7 $\frac{1}{4}$ "w, 3 3/4"h. Case in fine and compass in extremely fine condition.

Samuel Thaxter (1769-1842) established his firm in 1792 and when his son Joseph H. entered the business in 1822, changed the name to "Samuel Thaxter & Son". In 1826 they moved to 125 State St., the address on the label on the inside cover of the case. The Thaxters were considered by many to be Boston's leading instrument makers. The quality of this instrument supports such a statement.

(14 pounds, UP,REA)

\$ 240

