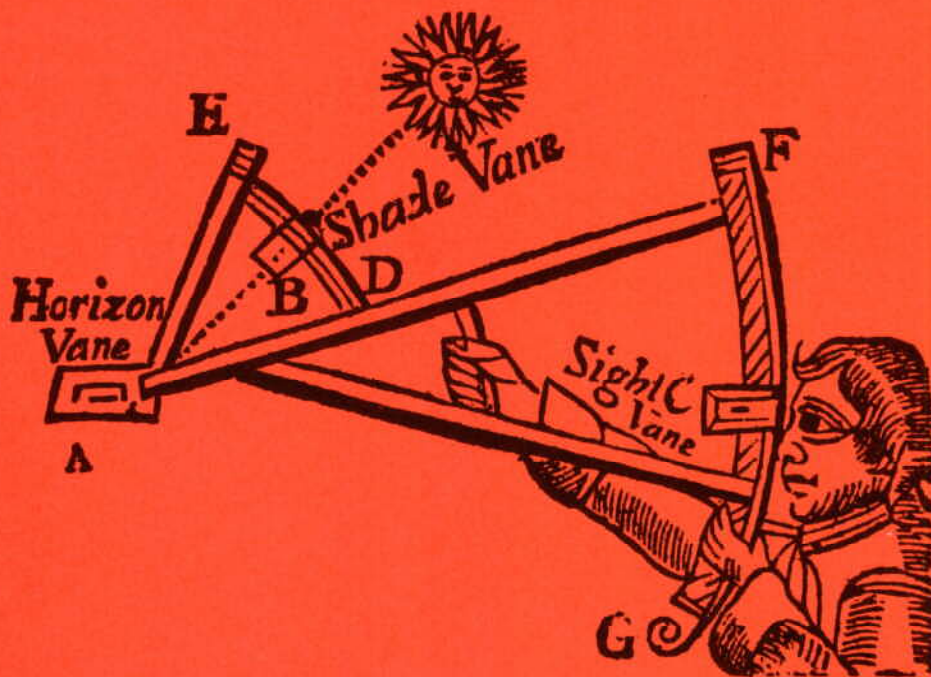


Historical Technology

Catalog 105



SAUL MOSKOWITZ INSTRUMENT ENGINEERING

6 MUGFORD STREET MARBLEHEAD, MASSACHUSETTS 01945

(617) 631-2275

Old, Rare, & Interesting Books

SURVEYING

1. Edward Laurence, "THE SURVEYOR'S GUIDE: Or A New Introduction To The Whole Art of Surveying Land, Both by the Chain and all Instruments now in Use", 3rd Ed, London, 1736. Full leather binding (rebacked 19th c.) 6 $\frac{1}{2}$ "h, 4"w; 231 pages text; 145 pages tables; 6 foldout copperplate engravings; binding and text in excellent condition. First published in 1716, this edition includes "a New Method of Surveying large Tracts of Land by Sounds as well as Sight, by Virtue of distant explosions, first Invented and Published by those two great Genius's and Improvers of Natural Philosophy, the Learned Mr. Whiston, and Mr. Ditton." The reference of course is to their unsuccessful attempt to capture the Longitude Prize in 1714. (postpaid) \$ 60
2. Samuel Wyld, "THE PRACTICAL SURVEYOR, OR THE ART OF LAND-MEASURING MADE EASY. Shewing by plain and familiar Rules, how to Survey any Piece of LAND whatsoever, by the Plain-Table, Theodolite, or Circumferentor: or, by the Chain only." 3rd Ed, London, n.d. (1740). Full leather binding (label missing) 8"h, 5"w, pages viii, 188, (4), with 6 foldout copperplate engravings and frontise piece illustrating a theodolite, telescopic bubble level, protractor, scale, and pantograph. Covers and text in very fine condition. Taylor 2 notes a first edition in 1725 and that the illustrated theodolite was the new design of J. Sisson. This book was important in the history of surveying for its emphasis on angular measurement in contrast to the use of the chain only. (postpaid) \$ 65
3. Josepho Liesganig (Societatis Jesu), "DIMENSIO GRADUUM MERIDIANI VIENNENSIS ET HUNGARICI", Vindobonae, 1770. Original board covers 10"h, 8 $\frac{1}{2}$ "w, pages (20), 262, (2), with 10 large fold-out copperplate engravings, 4 of the precision surveying and astronomical instruments used on this survey. Covers and text in excellent condition except for very minor staining. This detailed effort by the Jesuits represents the first major attempt to establish a prime geodetic reference across Central Europe, similar to the work of General Roy in England (but predating him by 17 years) and the Cassinis in France. The text includes a detailed discussion of the instruments and their use as well as presenting the primary and reduced data of the triangulation together with the resulting maps. Daumas points out that Schreiberlmayer and Ramspeck, the two leading instrument makers in Vienna, constructed quadrants in 1772 for Liesganig, probably for an extension of the work described in this book. (In scientific Latin) (postpaid) \$ 65
4. B. Talbot, "THE COMPLEAT ART OF LAND-MEASURING; OR A GUIDE TO PRACTICAL SURVEYING: Teaching an Exact Method of Measuring and Mapping of Lands, Woods, Waters, & c. by the CATOPTRIC SEXTANT, etc.", 2nd Ed, London, 1784. Fine full leather binding 8 $\frac{1}{2}$ "h, 5 $\frac{1}{2}$ "w, pages xxiii, (3), 412, with 13 copperplate engravings. Except for minor hinge cracks, covers and text in excellent condition. Taylor 2 indicates a 1st ed. in 1779. This book is of particular interest because of its advocacy of the mariner's sextant for land surveying and its interesting section on the pantograph for the preparation of maps. (postpaid) \$ 45
5. THE CLASSIC 18TH CENTURY REFERENCE - John Love, "GEODESIA: OR, THE ART OF SURVEYING AND MEASURING LAND MADE EASY", 11th Ed, London, 1792. Full leather binding 8 $\frac{1}{2}$ "h, 5 $\frac{1}{2}$ "w; (18 pgs before) 196 text pages with many woodcut diagrams, 56 pgs tables, and the 8 pg appendix on surveying by chain only. Contents in very fine condition, front & rear flyleaves missing and covers tight but cracked at hinges, leather good but showing edge wear. The 1st ed. was published in 1688 just after Love returned from surveying in Carolina and Jamaica. "The author who had been a Colonial land-surveyor, had in mind the needs of young men taking up grants of land in America, which they would probably have to stake out themselves." (Taylor 1) (postpaid) \$ 50
6. AN AMERICAN EDITION - John Love, "GEODESIA: etc.", The 13th Ed adapted to American surveyors, Samuel Campbell, New York, 1796. Board covers with leather back 8"h, 5"w, pages (14), 189, (53, tables), 8 (appendix). Cover in fine, contents very fine condition. This is a rare edition of a highly regarded book (there was a true 1st American Ed published in 1793 from the 12th London Ed). In many ways, these 2 editions mark the beginning of the great development of American surveying and no collection of American surveying instruments is really complete without one. (postpaid) \$ 80
7. PRESENTATION COPY - Samuel Moore, "AN ACCURATE SYSTEM OF SURVEYING", T. Collier, Litchfield, Conn., 1796. Original full leather binding 9"h, 5 $\frac{1}{2}$ "w; pages x, (6), 131 text pages, (1), with diagrams in text. Condition good to very good with page staining and minor cover wear. A blank page in rear inscribed in a flowing hand "This Book is a Present of/Samuel Moore/ To Wm. Rufsell/Salisbury, Sept. 4th 1807". An important book, probably the second one actually written and published in America on surveying; John Carter's attempt of 1774 having many deficiencies. The first part of the book presents a course in basic mathematics before going on to actual surveying; necessary because of the limited education of the men who were to use it. (postpaid) \$ 65

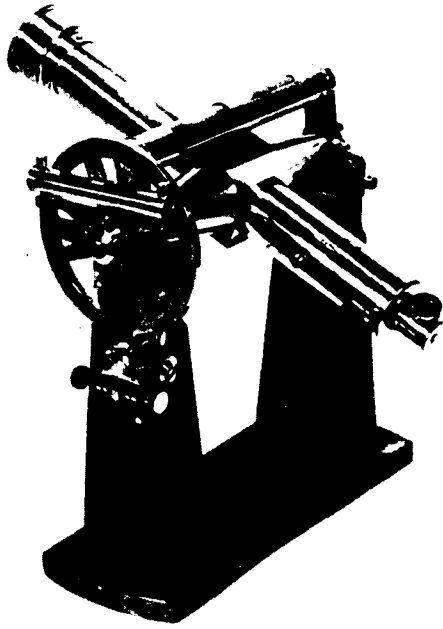
8. A HIGHLY REGARDED AMERICAN BOOK - Abel Flint, "A SYSTEM OF GEOMETRY AND TRIGONOMETRY: Together With A TREATISE ON SURVEYING", 2nd Ed, Hartford, 1808. Original leather binding (cracked hinges, edge wear) 9"h, 5½"w; 168 pages; the 4 foldout copperplate engravings; despite signs of use, contents in fine condition. The 1st Ed of 1804 was so well received that editions continued to be published for half a century. (postpaid) \$ 25
9. Abel Flint, "A SYSTEM OF GEOMETRY AND TRIGONOMETRY, With A TREATISE ON SURVEYING", 6th Ed, Hartford, 1830. Original leather binding (in nice condition) 8"h, 5"w; 122 pages text; 162 pages tables; the diagrams originally on the foldout plates have now been included in the text. Fine overall condition. "Flint" is one of the few American books which can still be collected in all editions at a reasonable cost. (postpaid) \$ 18
10. Abel Flint, "A SYSTEM OF GEOMETRY AND TRIGONOMETRY: with A TREATISE ON SURVEYING IN WHICH THE PRINCIPLES OF RECTANGULAR SURVEYING, WITHOUT PLOTTING, ARE EXPLAINED", Hartford, 1844. Original leather binding 8"h, 5"w in fine condition as are the contents; 160 text pgs, 112 pgs tables. Although not called out on the title page, this is the 10th ed of Flint and 3rd from the last in the series. (postpaid) \$ 14
11. Charles Davies, "ELEMENTS OF SURVEYING WITH THE NECESSARY TABLES", 1st Ed, J. & J. Harper, New York, 1830. Original leather binding (badly cracked at hinges) 8 3/4"h, 5½"w; 147 pgs text, 62 & 91 pgs tables, 8 large foldout copperplate engravings (the 9th missing), 4 of instruments: the theodolite, plane table and alidade, surveyor's cross & compass, marking protractor. Front fly leaf missing, some tears in edges of plates, otherwise contents fine. Intended for use at West Point, this book gained general popularity, there were 14 more editions through 1850. (postpaid) \$ 28
12. "GURLEY'S MANUAL, AMERICAN ENGINEERS' AND SURVEYORS' INSTRUMENTS", 38th Ed, Troy N. Y., 1905. Clothbound 6 3/4"h, 4½"w, 446 pages. Condition very good to fine. This well illustrated and priced catalog is an invaluable reference for any collector of American surveying instruments. (postpaid) \$ 12

PUBLISHED WORKS OF NATHANIEL BOWDITCH

Nathaniel Bowditch (1773-1838), self-taught mathematician, sea captain, insurance company president, and scientist played an important role in the development of both commerce and science in the early days of our nation. That this is now beginning to be recognized is indicated by the great sums his "Navigator" is bringing in the auction room (see "Remarks"). We are fortunate in that we have been able to continue our offering of rare, early, and important Bowditch publications.

13. THE RAREST EDITION OF THEM ALL - N. Bowditch, "THE NEW AMERICAN PRACTICAL NAVIGATOR", 3rd Ed, Edward Little & co., Newburyport, n.d. (1811). Original leather binding 9½"h, 6"w, black leather label "BOWDITCH'S/NAVIGATOR"; pages xiii, (iii), 276, 280 (tables), 619-653, 5 (advertisements) and the 12 engraved plates (somewhat out of place) including the foldout frontis map in its entirety. Binding and contents in very fine condition. This is the only edition not published by the Blunts and it seems that only about 200 copies were ever offered for sale "Because the Great Fire of Newburyport destroyed most copies of the Newburyport imprint, it is rare and, therefore, lacking in most Bowditch collections." (Campbell). Blunt then issued a 3rd ed in New York, which while scarce, is not particularly non-existent like the edition here. Interestingly, the 1st ed is not nearly as rare. (postpaid) \$ 265
14. N. Bowditch, "THE NEW AMERICAN PRACTICAL NAVIGATOR", 11th Ed, E. & G. W. Blunt, New York, 1839. Original leather binding (red leather label) 10"h, 6½"w; pages xv, (i), 317, (3 blank), 394 (tables), 395-447, 4; 13 engraved plates incl. complete frontis map. Binding in very good condition despite ½" sq chip in spine, contents fine. The last 4 pages consist of a paper by Edward I. Dent on the performance of chronometers, which was read before the British Association for the Advancement of Science. (postpaid) \$ 48
15. N. Bowditch, "THE NEW AMERICAN PRACTICAL NAVIGATOR", 27th Ed, E. & G. W. Blunt, New York, 1857. Rebound in full leather 9½"h, 6½"w; pages 8, xix, (1), 319, 396 (tables), 397-460, 3, 13 plates incl. complete frontis map. Overall condition very fine or better. (postpaid) \$ 40
16. N. Bowditch, "METHODS OF COMPUTING THE ORBIT OF A COMET OR PLANET". A bound independent volume also included as an appendix to the 3rd vol of his translation of La Place's "Mécanique Céleste", Hilliard, Gray, Little, and Wilkins, Boston, 1834. Original board covers 11"h by 9"w, cloth backstrip (some wear), 149 text pages, 108 pages tables. Excellent internal condition, binding good. This is an important book for all interested in early American astronomy and celestial mechanics. (postpaid) \$ 60

The Compleat Surveyor

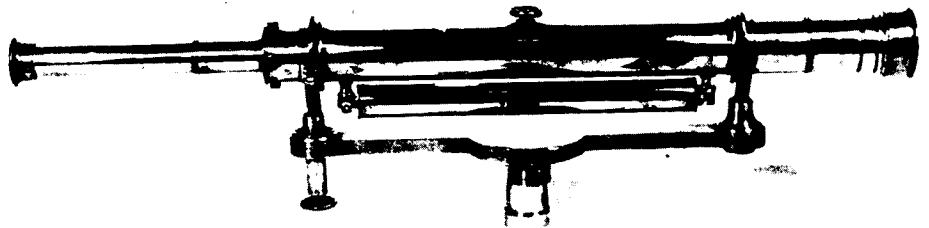


121. A PORTABLE TRANSIT INSTRUMENT - English, c. 1870, signed "JOHN BROWNING/LONDON". Ht (as shown) 14"; brass telescope 14" long, 1 5/8" d objective, right angle eyepiece for zenith sightings, 5" d readout scale with 2 5/16" rad vernier reading to 1 arcmin; removable 8" long set-up bubble level; 4 1/4" fixed bubble on readout circle. The entire telescope assembly lifts off iron stand with 4 1/2" x 12" base and dual uprights 9 1/2" h, 7 1/2" apart. Original fitted dovetailed wooden case 16" x 13" x 9". Case is sound although surface wear is as to be expected from field use. Telescope assembly and stand in excellent condition.

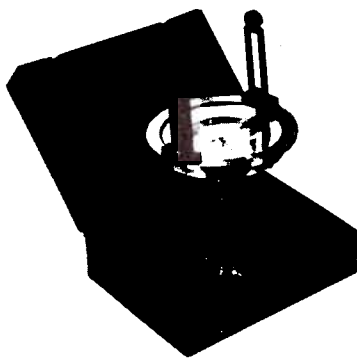
John Browning, noted for his spectroscopic instruments, produced other high quality items too, as this example and Item 104 in the microscope section prove without question. This transit instrument follows basic Troughton design concepts as described by Frederick Simms (Treatise on Prin. Mathematical Instr., 1834) and "is a meridional instrument, employed, in conjunction with a clock or chronometer, for observing the passage of celestial objects across the meridian, . . . affords the best means of determining the difference of longitude between any two places where corresponding observations may have been made. . . . It also may be employed very successfully in determining the latitude." This is an uncommon instrument.

(45 pounds, UP, Air Freight) \$ 570

122. LARGE EARLY WYE LEVEL - English, 1st qtr 19th cent, unsigned. All brass 22" long, telescope 1 3/8" d, bubble level 8 1/4" long, 5 1/2" overall ht. Rack and pinion focusing of objective. Erecting eyepiece. Cross brackets from center post probably supported a cross bubble or compass (now missing). One wye is moved by means of an elevation screw for final leveling adjustment of the instrument. Very fine condition. Little information can be located on this instrument; it is not even discussed in Frederick Simms' book on Mathematical Instruments (1834) and other early 19th cent books on surveying illustrate later developments. There are however, similarities to B. Martin work of the 1760's and 70's and indeed it may derive from this source as have many other English instruments.

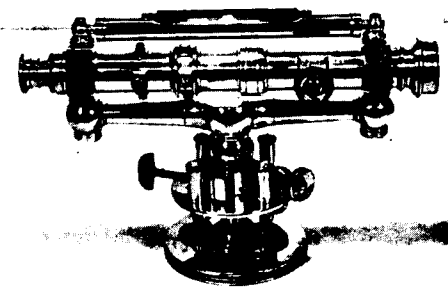


(10 pounds, UP, PS) \$ 185



123. POCKET SURVEYOR'S COMPASS - French, c. 1900, unsigned, but marked "MADE IN FRANCE" for the American market. Brass construction 4" outside dia, 7 1/4" h on universal staff mount. Silvered dial 3 1/8" dia, 2 3/8" needle, crossed bubble levels in bottom of dial. Blackened fold-down sight vanes 2 3/4" h with notches for suspension on line. Original leather case 6" x 4 3/4" x 1 1/2" h. Compass and case in near mint condition. Such instruments were intended for preliminary field surveying, mapping and checking of construction work.

(4 pounds, UP, PS) \$ 75



124. AMERICAN BUILDER'S LEVEL - c. 1870 1870-75, unsigned, but unmistakably the work of W. & L. E. Gurley (see the 15" Builder's Level in their 1873 catalog). All brass, telescope 11" long, 1 1/8" d objective with rack and pinion focusing, 7" long bubble level mounted to octagonal support collars (rather than to telescope directly as shown in catalog); 7 1/8" overall ht incl. 4 screw leveling base. Excellent exhibition condition.

The W. & L. E. Gurley Co. (originally Phelps and Gurleys till 1852) is one of the few American surveying instrument companies still in business. This instrument, in addition to the usual elegance which is typical of Gurley items is also somewhat of a challenge. The attachment of the bubble level is strange and the lack of a name is stranger still.

(11 pounds, UP, PS)

\$ 160

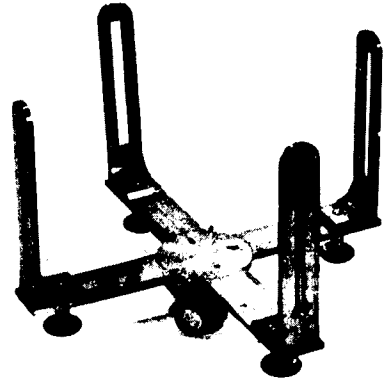


124A. ENGINEER'S LEVEL - English, early 19th cent, unsigned. All brass 11 5/8" long, 3 1/2" h, bubble 6" long. Slide tube focusing of 7/8" dia objective. Inverted image. Excellent condition with original lacquer finish. Such instruments were intended for use during construction work. Without wyes for reversal this is, in many ways, an early form of the basic "dumpy level".

125. A TRUE SURVEYOR'S CROSS - English, (5 pounds, UP,PS) † 75 probably late 18th cent, unsigned.

All brass crossarms 8" long, screw-on sight vanes 4 1/8" h, 5 5/8" overall ht. Intended for mounting on a Jacobs staff. Very fine overall condition with minor spotting of original lacquer finish. A similar instrument is illustrated in Rees' Surveying Plate III, fig. 1 and described as:

"CROSS, in Surveying, is a mathematical instrument of great utility to a land surveyor, as it enables him, while going about his survey with his chain, to measure the length of the station lines, at the same time to take offsets, or perpendicular directions to the corners of a field, or irregular boundaries; . . . Fig. 1, Plate III (Surveying) represents one usually made of brass by mathematical instrument makers; . . ." Although this is one of the simplest forms of a surveyor's sighting instrument, few have survived and one such as this is a rare find.



(5 pounds UP, \$ 6 registered mail) \$ 330

126. MINERS' COMPASS OR DIPPING NEEDLE - American, c. 1880, signed "W. & L. E. GURLEY/TROY, N. Y." Brass case 3 7/8" dia, 7/8" thick with both brass covers in place; silvered scale and 3" needle; glass plates on either side; 4 1/4" d suspension ring. The shape of the needle is identical to that found in the 1880 Gurley Catalog and the 1873 catalog states; "When in use, the ring or bail is held in the hand - the compass box by its own weight takes a vertical position - and should also be in the plane of the magnetic meridian. In this position the needle, when unaffected by the attraction of the iron assumes a horizontal line, . . . over any mass of iron it dips, and thus detects the presence of iron ores with certainty." Various designs of this instrument were made, however Gurley stated, "The best form, however, we believe to be that shown in the engraving, . . .", that is the model offered here. Extremely fine condition.



(4 pounds, UP,PS) \$ 130

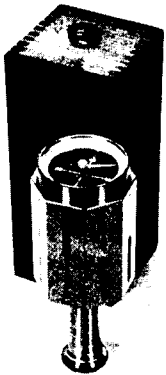
127. IMPROVED SURVEYOR'S CROSS - English, c. 1880, signed "W. F. STANLEY/3 & 5 Gt. Turnstile. London W. C." Brass cylinder 3 1/2" d, 4 1/2" h on staff mounting post for 7 1/4" overall ht. Silvered outer compass ring, black interior dial, 2 5/8" needle.



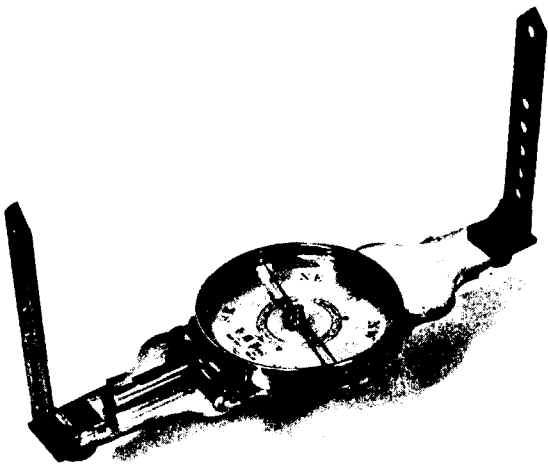
Lower portion of cylinder rotates with respect to upper; sighting slits in both. Inset silver azimuth scale with vernier reads to 1 arcmin. Original oak case 4 1/4" sq, 8 1/4" h. Instrument in excellent and case in fine condition. This item is similar to no. 145 of Cat. 104 but slightly larger and signed. This form of instrument was designed by William Jones of W. & S. Jones and according to Rees', "where no great accuracy is required, this small pocket instrument unites the advantages of a cross, circumferentor, and a small theodolite.

(8 pounds, UP,PS) \$ 150

128. OCTAGONAL FORM SURVEYOR'S CROSS - English, c. 1880, unsigned but identical to signed instruments by Stanley, Great Turnstile, London. All brass, original lacquer finish in perfect condition, 2 1/4" d compass on octagonal body 2 1/2" across and 3 1/4" h; overall ht (with mounting post) 7". Sight slits on every face so that 45° as well as 90° corners may be set up. Black face compass dial (lettered for the French market) with silvered outer ring, 1 3/4" needle. Original oak case 3 1/4" sq, 8" h. Case in very fine and instrument in mint condition.



(6 pounds, UP,PS) \$ 90



129. A POOL SURVEYOR'S COMPASS - American, c. 1865-70, signed "H. M. POOL./EASTON MASS.". Brass compass with 5" d silvered dial; 4 1/4" needle; 14" long base supporting 6 1/2" h screw-on sight vanes; crossed 2" bubble levels; with 4 1/2 ft high mahogany tripod (not shown). Tripod in fine and compass in very fine condition. (No case.)

Smart writes that according to the history of Easton, Mass. published in 1886:

"In the south part of town, in the year 1828, J. & H. M. Poole began the manufacturing of mathematical instruments on a small scale. A strong prejudice for foreign-made instruments was only slowly overcome. Poole's work was said not only to equal but even to excel the imported." John Pool (the J. of J. & H. M.) died in 1865 leaving his younger brother Horace Minot (1803-1878) to produce instruments such as this. Later the family added the "e" to the name.

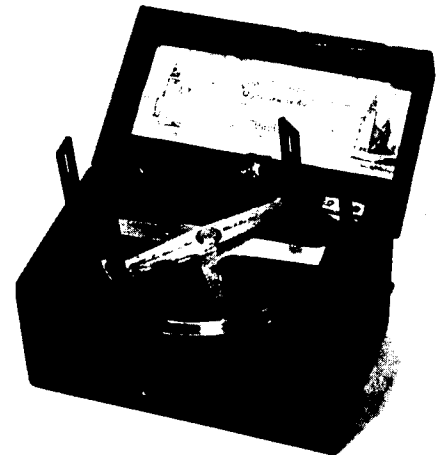
(10 & 12 pounds, UP, Air Freight)

\$ 235

130. GRAPHOMETRE OF THE HIGHEST QUALITY -

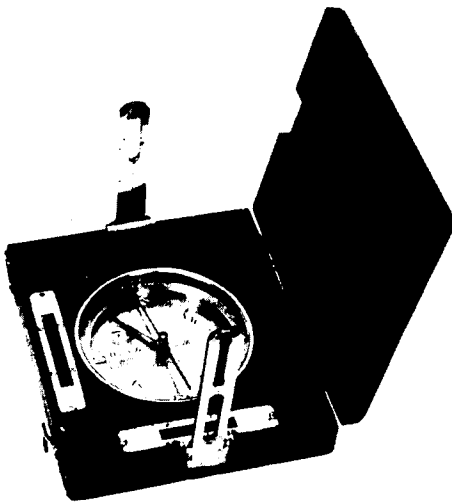
French, c. 1820-25, signed "L'Ingr. Chevallier Opticien du Roi Place du Pont Neuf à Paris." All brass in original lacquer finish; the fixed readout semi-circle 6 1/4" d; the 2 1/4" h moveable vanes separated 4 1/2"; readout by scale and vernier (engraved directly in the brass) to 2 arcmin. Overall ht 6 1/2". Original dovetailed walnut case 8" x 4 3/4" sq with Chevallier's rare trade label in the cover. Case in fine and graphometre in extremely fine condition.

The trade label states that his (Jean-Gabriel-Augustin Chevallier's) firm was established in January 1796 and by his family in 1740. Daumas does little but repeat the information on this label. The graphometre (semi-circumferentor) long enjoyed some popularity on the continent although the full circle compass was much preferred in English speaking lands. This is a fine example of an early form of surveying instrument.



(7 pounds, UP, Air Freight)

\$ 275



131. A RARE SURVEYOR'S COMPASS -

English, very early 19th cent, signed "W. & S. Jones, 30 Holborn./LONDON". Mahogany body 8" long, 7" w, 1 5/8" h (cover closed); brass fold down sight vanes 4 1/2" h; inset crossed bubble levels under 4 1/8" x 3/4" brass plates; 4 1/2" d silvered compass dial with 3 3/4" needle. Very fine condition.

W. & S. Jones, in business from 1785, moved to 30 Holborn in 1802. Goodison points out 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." This instrument is highly unusual in that it employs the use of wood in a way which is more "American" than "English". Indeed, if it was not for the signature one would be tempted to give it an American origin. There is certainly the hint that "unique" American use of wood needs some reconsideration.

(6 pounds, UP, Air Freight)

\$ 290

132. PENDULOUS MIRROR CLINOMETER -

English, c. 1885, marked "J. HICKS MAKER 8 HATTON GARDEN LONDON/WATKIN MIRROR CLINOMETER REG 14 MAR 1881". Brass case 2 3/4" d, 5/8" thick; semicircular glass window to illuminate elevation scale on inside edge; and a pendulous mirror to generate an artificial vertical and reflect the readout scale back into 1/2 the field of view, the other half is for viewing the object to be measured. This is an extremely interesting improvement on the earlier pocket clinometers which had a fixed mirror and a pendulous (moving) internal scale. Fine condition.

(2 pounds, UP,PS)

\$ 60

