

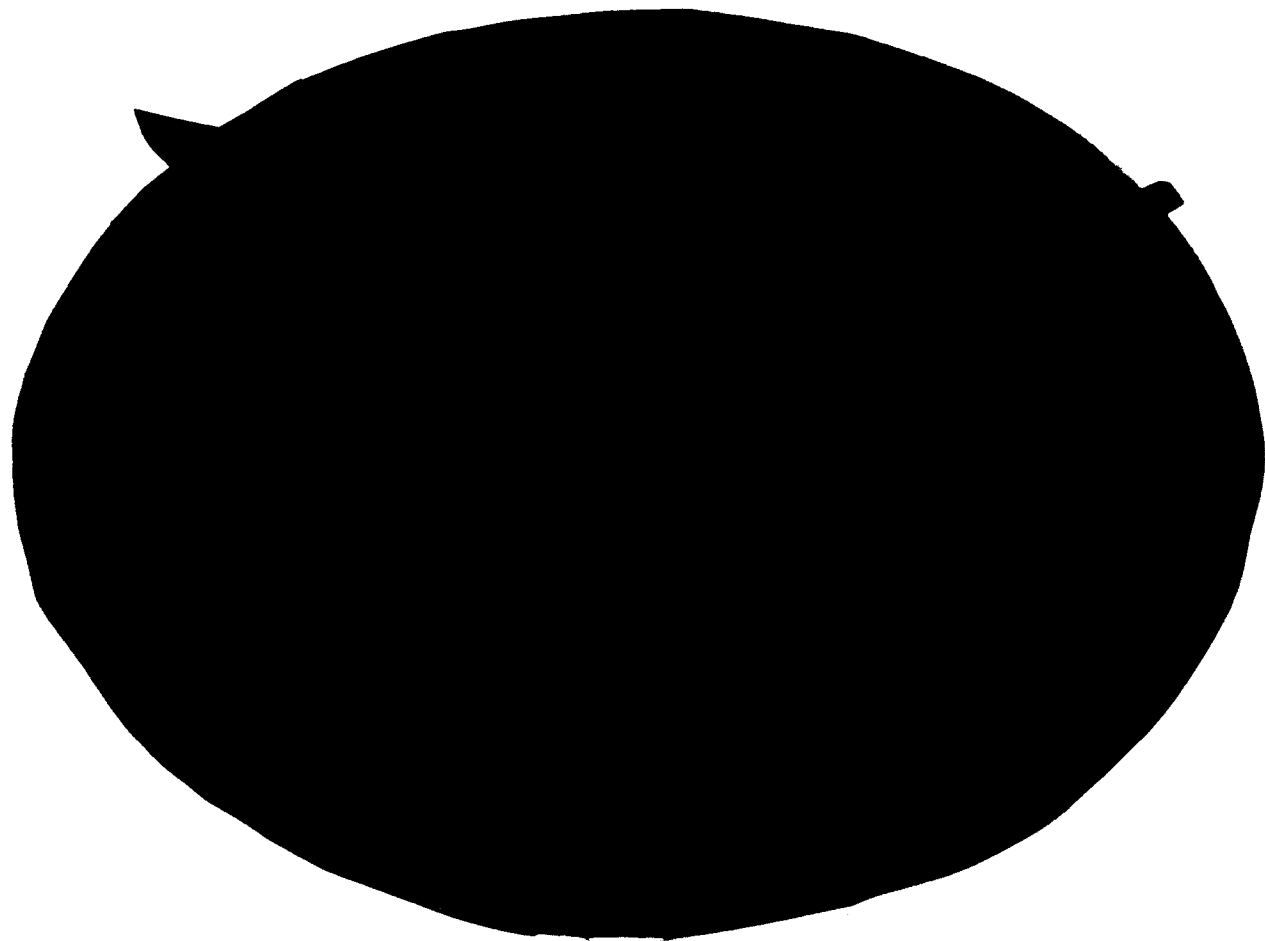
Historical Technology, Inc.

SAUL MOSKOWITZ, President

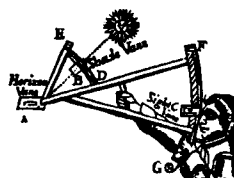
6 Mugford Street

Marblehead, Massachusetts, 01945. U.S.A.

(617) 631-2275



ITEM 186
MOSES BLISS' SILVERED
STANDARD TIME TELLER
AND MAGNETOMETER



Catalog 120

Spring, 1980

Five Dollars

TERMS OF SALE

All prices in this catalog are net and payment must accompany your order. If you are unknown to us we ask your patience for the few days delay between receipt of your order and shipment while your check clears. However, if you can supply proper references with your order, shipment will be immediate.

Our bank is the National Grand Bank, Pleasant Street, Marblehead. Trade references can be supplied if requested.

When inquiring about or ordering any item, please give the number of the catalog, the item number, and the key descriptor words (capitalized).

Shipping methods are indicated for all items. Those marked "postpaid" and valued \$ 200 or less will be so mailed to all points in the U. S. Those of greater value than \$ 200 and marked "postpaid" will be so sent only within the continental U. S. Buyers in Alaska and Hawaii are responsible for shipping costs on such items. Buyers in all other countries are responsible for all shipping costs on all items. Only those items which fall within international insurance and weight limitations will be sent by post (example - insurance limits to Canada are \$ 200, to Great Britain - \$ 1,200, to Mexico - \$ 15). All other shipments will be made by air freight - shipping charges collect. No items of value over \$ 15 will be shipped to Mexico. It has been our experience that Mexican Customs officials will arbitrarily reject shipments, even those guaranteed free movement by international treaty. We will not get involved in the bribes apparently necessary in such cases. Please remember to include the cost of insurance in figuring shipping charges. For items shown with an amount for registered mail, add the amount to the price of the item. When a shipping weight is given, the available ways for sending the item are also shown - "UP" for United Parcel Service (in those states where such service is available), "PS" for Parcel Post, and "air freight". See next page to determine availability and charges for United Parcel Service. For Parcel Post, call your local post office and ask for the charges to send a package of the same weight and value to Marblehead. The cost for service in the opposite direction will be the same. (Remember, Parcel Post may be sent to a P. O. Box number but that a street address is required for United Parcel.) If you send more than required, we will return any over-payment. All items marked "air freight" (or for which you choose this method of shipping) will be sent shipping charges collect. We will not ship other items until full payment for shipping has been made. Please be certain to calculate the shipping costs and insurance of each item as a separate unit when ordering more than one item rather than adding the weights of all items together and then determining an overall cost.

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. Further, we will not permit your use of this privilege in the future.

If upon receipt of any numbered item in the catalog, you find it not to conform with your impression of its condition despite our detailed descriptions and photographs, you may return it within 3 days of receipt for a complete refund except for the new reference books at the end of the catalog. However, it must be received by us complete and in the condition sent to you and you are then responsible for all packing, shipping and insurance costs (in both directions). We have gone to great effort to represent each article accurately and correctly so that you will know what you are getting before purchase.

We are set up to handle mail orders only and do not have an open shop. If you are interested in examining one or two items (we have no way to exhibit our entire stock) and if you call several days in advance, we can arrange for you to come and view those items.

Historical Technology, Inc. reserves the right to limit, restrict, or remove from sale, any and all offerings of this and any other catalog issued by us.

We are interested in buying single items and entire collections.

Residents of Massachusetts please add the 5% sales tax to your payment.

All prices in this catalog may be changed without notice after November 1980.

CATALOG SUBSCRIPTION INFORMATION

We offer an introductory (one time) year's subscription to these catalogs (two issues - Spring and Fall) at the rate of \$ 4 (\$ 6 overseas). Those receiving 3 issues (either by individual order or subscription) and not becoming regular customers will be required to pay our standard (scholar's) subscription rate of \$ 10 (\$ 12 overseas) if they wish to receive further copies.

49. John Thomas Towson, "TABLES FOR THE REDUCTION OF EX-MERIDIAN ALTITUDES", 3rd Ed, J. D. Potter, London, 1852. Original stitched paper wrappers (some wear on back edge) 9 5/8" h, 6" w; 30 pgs. These tables are for the determination of latitude to 1/2 mile accuracy without calculation from 2 non-meridian altitudes of the Sun. They were published by order of The Lords Commissioners Of The Admiralty. (postpaid) \$ 22
50. E. C. Ward, "NEW LUNAR TABLES, FOR CORRECTING THE APPARENT DISTANCE OF THE MOON FROM THE Sun, Fixed Star, or Planet, FOR THE EFFECTS OF REFRACTION AND PARALLAX, . . . WITH PLAIN AND EASY DIRECTIONS FOR TAKING A LUNAR OBSERVATION, AND SOME USEFUL REMARKS ON THE SEXTANT.", 3rd Ed, E. & G. W. Blunt, New York, 1834. Modern cloth backed boards (to match the original) 9" h, 6" w; pgs. 21, (20). Generally fine condition except for heavy staining along outside page edges. The preface dated 1823 (date of 1st Ed?) states that this book with its tables was prepared to correct for extensive errors to be found in the works of Turner and Elford. It is not surprising that Blunt issued this book since Turner's book was being published by Patten, the mortal enemy of the Blunts. (postpaid) \$ 52

First Solution Submitted Under The Longitude Act of 1714

51. William Whiston & Humphry Ditton, "A NEW METHOD For Discovering the LONGITUDE BOTH AT SEA and LAND, Humbly Proposed to the Consideration of the PUBLICK.", (1st Ed), John Phillips, London, 1714. Modern full leather binding 7 3/4" h, 4 3/4" w; pgs. 78, (1), a few text diagrams and tables. Fine overall condition. See Moskowitz, "Three Studies . . ." for the historical background to this work. A (relatively) more common 2nd edition of 104 pages was published in 1715 to counter the objections to the approach first advanced here. It was to prove no more successful, for the Whiston-Ditton "sound and light signal" method had both basic theoretical and practical faults. It is interesting that, from our vantage point 2 1/2 centuries later, we can see that the present system of LORAN transmitters provides a working solution to the Longitude Problem which is not dissimilar to the authors' basic concept. (postpaid) \$ 375
52. Henry Wilson, "Navigation New Modelled: OR, A TREATISE OF Geometrical, Trigonometrical, Arithmetical, Instrumental, and Practical NAVIGATION;", 8th Ed, J. Mount & T. Page, London, 1764. Original leather binding, rebounded many years ago, 7 5/8" h, 4 3/4" w; pgs. xvi, 527, (1), 10 engraved foldout plates. Binding somewhat worn but contents complete and in fine plus condition. Wilson (1673-1741) published the first edition of this work in 1715 and, after his death, William Mountaine prepared revised editions as he did for the other Mount & Page books, "Atkinson", "Wakely", etc. Wilson also produced several works on surveying and also managed to get into a heated controversy with Haseldon over an improved form of chart projection. He wanted to replace the use of Mercator Projection Charts and Mercator sailing with its rumb line courses (which develop severe problems in the high latitudes) with a system of navigation which would come closer to great circle sailing. See Taylor 2 for details on his unsuccessful effort in this direction. (postpaid) \$ 145

LAND SURVEYING

53. Cosimo Bartoli, "DEL MODO DI MISURARE LE DISTANTIE, le superficie, i corpi, le piante, le prouincie, le prospettie, & tutte le altre cose terrene, che possono occurrere a gli huomini, secondo le vere regole d'Euclid & de gli altri piu lodati scrittori", 2nd Ed, Per Francesco Franceschi Sanese, Venice, 1589. Early vellum binding 9" h, 6 3/4" w; 148 leaves including fine woodcut title and portrait, 2 foldout plates, and over 100 woodcut diagrams in text. Fine overall condition with very minor worming in margin. This major Italian book on surveying (1st Ed in 1564) is of particular interest because it illustrates the major surveying instruments of the period (the square with pivoted alidade, classical simple quadrant, navigator's cross-staff, and astrolabe) with many figures and diagrams showing their use. Bartoli's unique design for a plane table instrument with theodolite functions is also described and illustrated: design features of each element, the assembly, and its use in mapping. The book itself is a fine example of the printer's art and the pictorial figures nicely executed. (In Italian) (postpaid) \$ 285

First Edition of a Major American Work

54. Charles Davies, "ELEMENTS OF SURVEYING WITH THE NECESSARY TABLES", 1st Ed, J. & H. Harper, New York, 1830. Modern full leather binding 9" h, 5 1/2" w; 147 pgs text, 62 & 91 pgs tables, 8 large foldout copperplate engravings (the 9th of leveling operations missing), 4 of instruments: the theodolite, plane table and alidade, surveyor's cross and compass, marking protractor. Fine overall condition except for occasional light foxing and a repair to one plate fold. This book was initially intended for use at West Point, but became so generally popular that many editions were printed. Karpinski lists 15 issues between 1830 and 1850. (postpaid) \$ 75

Mine Surveying & Engineering

55. (Ew. Furstl. Durchl), "Neu-entdeckte Practible Minir-Kunst/Uber einen haussen zu sturzen: starke Mauren/Wall/und Pastenen; um denen darzu bestimmten Truppen/einen Weg zu bahnen/in machtige Vestungen zu gelangen/selbige zu uber-waltigen.", Martin Endters, Nurnberg, 1686. Old but not original leather binding 6 1/2" h, 4" w; pgs. (20), 92, 4 folding engraved plates. Very fine overall condition except for a marginal worm hole at the beginning and marginal repairs to the last 6 leaves with partial loss of a few words. The book describes the lay out of mine galleries, sinking of shafts, shaft-head structures, and mining tools. (In gothic letter German) (postpaid) \$ 155

56. Thomas Fenwick, "A TREATISE ON SUBTERRANEAN SURVEYING, AND THE VARIATION OF THE Magnetic Needle.", 2nd Ed, Baldwin, Cradock, & Joy, London, 1822. Original board covers (replaced cloth backstrip) 9" h, 5 3/4" w; 227 pgs and 8 large folding engraved plates. Fine to very fine overall condition, pages uncut. This book is based upon the author's own work in the coal mines in the Newcastle region, the 1st ed published in 1804. He also wrote on Practical Mechanics (1822). This book should be of particular interest in America because of the detailed consideration of magnetic variation and its effect on surveying accuracy and on relating surveying measurements of the past to the present. (postpaid) \$ 75

* * *

First New York Edition

57. Robert Gibson, "A TREATISE OF PRACTICAL SURVEYING;", 8th Ed, (1st New York and 5th American), William A. Davis & Co., New York, 1798. Modern leather binding 8 1/2" h, 5 1/4" w; 452 pgs. and 13 plates. Minor foxing and staining of end pages, fine overall condition. Taylor 2 notes a 2nd edition of 1767⁷ implying it was London published. The evidence suggests that Gibson was Irish and several of his editions of this work are known to have been published in Dublin. The 1st American edition (called the 4th) was published in 1785 and by 1839 there had been 22 editions in this country. (postpaid) \$ 115
58. Robert Gibson, "THE THEORY AND PRACTICE OF SURVEYING:", (6th N. Y. & 12th American Ed), Duyckinck, New York, 1814. Original leather binding 9" h, 5 1/4" w; pgs. (4), 324, (16), 17-184, 13 (of 14?) folding engraved plates. Binding sound (minor edge wear), contents very good except for foxing on many pages. Karpinski calls for 14 plates in this edition. However this copy was never issued with a 14th plate and the text makes reference only to the first 13. Thus we believe it to be complete in its present form. There are extensive descriptions of instruments and their use. (postpaid) \$ 70
59. John Gummere, "A TREATISE ON SURVEYING, CONTAINING THE THEORY AND PRACTICE: TO WHICH IS PREFIXED A PERSPICUOUS SYSTEM OF PLANE TRIGONOMETRY.", 4th Ed, John Richardson & Kimber and Sharpless, Philadelphia, 1825. Original leather binding 9" h, 5 1/2" w; pgs. 216, 152 (mathematical tables with separate title page dated 1822), 8 folding engraved plates. Very good overall condition with extensive water stains and light to moderate foxing. This treatise (1st edition in 1814) continued in use for over 100 years, Karpinski noting that there was an edition as late as 1917. (postpaid) \$ 60
60. (Gurley Catalog), "A MANUAL OF THE PRINCIPAL INSTRUMENTS USED IN AMERICAN ENGINEERING AND SURVEYING.", 12th Ed, W. & L. E. Gurley, Troy, N. Y., 1868. Original board covers (recently re-taped) 6 5/8" h, 4 1/4" w; 176 pgs. with many illustrations of surveying instruments. A price list is included. Very good overall condition except for some water stains and some wear to the covers which have been re-attached (originally by Scotch tape and now by cloth tape with a new leather backstrip). (postpaid) \$ 40

Author's Own Copy in Special Binding

61. Colonel Sir Henry James, Royal Engineers, F. R. S., "COMPARISONS OF THE STANDARDS OF LENGTH OF ENGLAND, FRANCE, BELGIUM, PRUSSIA, RUSSIA, INDIA, AUSTRALIA, MADE AT THE ORDNANCE SURVEY OFFICE, SOUTHAMPTON, BY CAPTAIN A. R. CLARKE, R. E., F. R. S.", Her Majesty's Stationery Office, London, 1866. Original special gold tooled and embossed leather binding 12" h, 10" w; pgs. vii, 287, (1), 10 plates (9 double page, one 8-fold 21 1/2" h x 29 3/4" w), 4 pg. list of books. Very minor foxing, excellent overall condition. At time of publication this was the most comprehensive and scientific study of standards of length as applied to geodesy ever performed. The book contains detailed mathematical analyses as well as descriptions of testing equipment and listings of experimental results. All 10 plates depict instrumentation. Colonel James is also known for his studies of the Great Pyramid of Egypt. (postpaid) \$ 125

Second American Edition

62. John Love, "GEODAESIA: OR, THE ART OF SURVEYING AND MEASURING LAND made Easy. . . . AS ALSO To lay out New Lands in AMERICA, or elsewhere: . . .", The 13th Ed adapted to American surveyors, Samuel Campbell, New York, 1796. Modern leather binding 8" h, 4 1/2" w; pgs. (14), 189, 53 (tables), 8 (appendix on surveying by chain only), many text woodcut diagrams. Contents generally fine with minor stains. The first edition of this work was published in London in 1688 just after Love returned from surveying in America. There were (obviously) at least 13 English editions and 2 published in America. The first published here (in 1793) was based on the 12th London edition. (postpaid) \$ 138
63. Frederick W. Simms, "A TREATISE ON THE PRINCIPLES AND PRACTICE OF LEVELLING. Showing Its Application to Purposes of RAILWAY ENGINEERING AND THE CONSTRUCTION OF ROADS, . . . Mr. Law's Practical Examples For Setting Out Railway Curves and Mr. Troutwine's Field Practice Of Laying Out Circular Curves.", 5th Ed, Lockwood & Co., London, 1866. Original cloth binding 9" h, 5 3/4" w; pgs. vii, 215, 16 (book catalog), 6 engraved plates (5 of which are folding), several text figures. Fine overall condition except for a weak front hinge and minor edge wear to the binding. The author, a noted English civil engineer and surveyor (although probably not related to Troughton and Simms), wrote "A Treatise on the Principal Mathematical Instruments", 1834, and the 1st edition of this work in 1836. Taylor 2 notes that he was employed on surveying, levelling, and astronomical work, at first by the Ordnance Survey, and then at the Royal Observatory. (postpaid) \$ 52

64. Henry Wilson, "SURVEYING IMPROV'D: OR, THE WHOLE ART, BOTH IN THEORY and PRACTICE, FULLY DEMONSTRATED. . . . To which is now added, GEODESIA ACCURATA: OR, SURVEYING made EASY by the CHAIN only.", 3rd Ed, J. Wood & C. Woodward, London, 1741. Original leather binding (label on spine lacking) 8" h, 5" w; pgs. (14), 539, (6), 11 engraved plates; bound with William Hume, "SUMMARIUM STERIOMETRIAE: OR A NEW ESSAY UPON SOLIDS; . . .", (1st Ed?), London, 1740. 78 pgs. Covers sound but beginning to show hinge cracks while the contents are in very fine condition. The author (1673-1741) was a teacher of applied mathematics including navigation and surveying. His attempt to replace Mercator (or Rumb-line) sailing by Great Circle sailing based upon a special two-dimensional chart of his own invention could have been a major advance over current practice. A proposed revised Marine Atlas was never published, most likely because of the opposition of others who had a vested interest in the status-quo. Wilson turned his attention to surveying with the 1st edition of this work published in 1731. The section on surveying by chain only was then issued in 1732. The 3rd edition, as revised by William Hume, was issued in the same year as Wilson's death. (postpaid) \$ 165

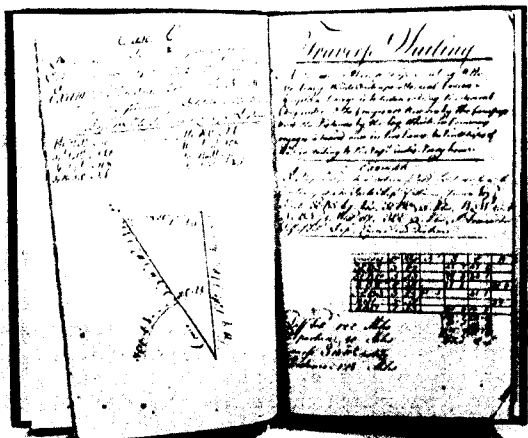
MANUSCRIPT BOOKS & LETTERS

In Defense of Hassler's Coast Survey

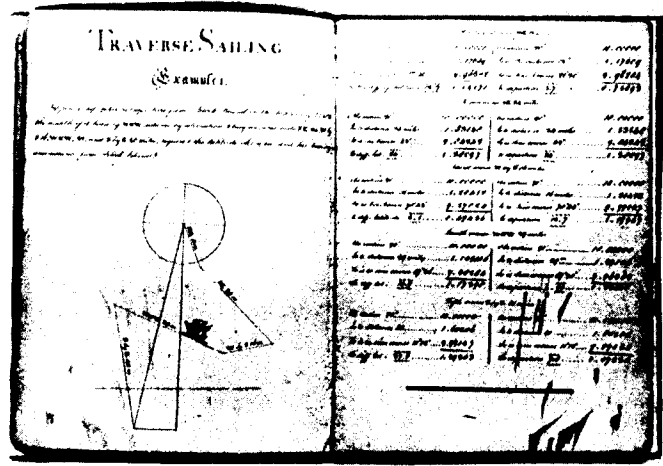
65. Geo. W. Blunt, autograph letter to Congressman H. A. Wise, dated "New York. June 25. 1841". Folio sheet, page size 9 3/4" h x 7 7/8", text on 2 of the 4 pages. Fine overall condition. The letter points out the baselessness of Congressman Cushing's attack on Hassler's triangulation of the Eastern coast: "*Mr. C. asks what has been gained by Mr. H's triangulation - I answer, a detailed and accurate delineation of a surface of land and water containing over 10000 square miles, and a length of 600 miles of seacoast, comprising some of our most important seaports, & executed with a minuteness that has not a precedent in any other country.*" Further, "*- the late Dr. Bowditch told me that Mr. H. had done more & his work was of more advantage to the country in making a school of accurate, practical, working men of science than any institution that he knew of.*" The recipient, Henry Alexander Wise (1806-1876), American politician and soldier, born in Drummondtown Virginia, served in the U. S. House from 1833-43, was minister to Brazil 1844-47, governor of Virginia 1856-60, and brigadier-general in the Confederate Army. The author, G. W. Blunt (1802-1878), was son of Edmund M. Blunt, original publisher of the "American Coast Pilot" and Nathaniel Bowditch's "New American Practical Navigator". He and his brother, Edmund Blunt (1799-1866), succeeded their father in his nautical book and chart publishing and instrument making and selling business. This is an important letter in the history of the U. S. Coast Survey. (postpaid) \$ 225

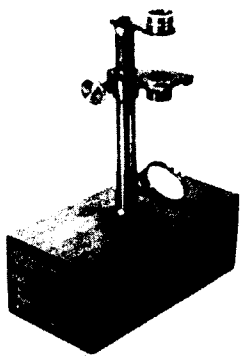
Navigation Notebooks

66. Willson Carpenter, "HIS BOOK ON NAVIGATION", American, 1791. Modern full leather binding 12 1/4" h x 7 1/2" w; 92 text pages, only 12 of them blank on one side. Approx 30 text diagrams such as the one shown in the illustration. Some edge and corner wear to the first few pages (no loss of text) and some stains, still in generally fine condition. The subjects covered include: Plain Sailing, Traverse Sailing, Mercator's Sailing, Middle Latitude Sailing, "Parralel" Sailing, Preparation of a Sea Journal (Cape Cod to Bermuda and Cape Sable to Lisbon), and How to Work & Correct an Observation. The author is obviously from New England (based upon the Journal examples) and possibly from the Newburyport area where this book was found. We have not been able to determine the source of the approach used here except to establish that it was neither Wakely, Atkinson, Wilson, Patoun, Moore, Robertson, nor Haselden, and it predates Bowditch by a decade. (postpaid) \$ 245



67. John T. Lowber, "A COMPEND OF NAVIGATION", Philadelphia, May 20, 1805. Original soft cover notebook now bound within modern leather backed boards 14 1/2" h x 10 3/4" w; 44 pgs. Elegantly prepared book in fine to very fine condition. This notebook seems to have been made for an initial course in navigation derived from Bowditch's "New American Practical Navigator". Pen and ink diagrams on many pages, 31 in all. Subjects covered include Plane Sailing, Traverse Sailing, Parallel Sailing, Middle Latitude Sailing, Mercator's Sailing, Variation of the compass, Latitude by Meridian Altitudes, and Latitude by Double Altitudes. This is a particularly good example of an American navigational notebook and would serve well for display purposes. (postpaid)





132. BIOLOGIST'S SIMPLE MICROSCOPE - English, mid 19th c, unsigned. Brass microscope with original bright lacquered finish and black oxidized fittings, mounts on the top of its own 3 1/4" x 6 1/4" x 2 1/2" h mahogany case for an overall ht of 7 1/2" (min) extending to 9 3/4" by rack and pinion focussing. Stage 1 1/2" w fitted with bracket for now lacking condenser, substage mirror 1 3/8" d, rear column 4" h. Two (of original 3) screw-together simple magnifying lenses. Incomplete live box. Fine to very fine overall condition. This instrument is based upon Field's (of Birmingham) design which received the Council of the Society of Arts premium award for the best price-limited simple microscope as described on pgs. 75 and 76 of the 1856 1st edition of Carpenter. A similar example is shown as Fig. 317 of Billings.

(4 lbs, UP, PS)

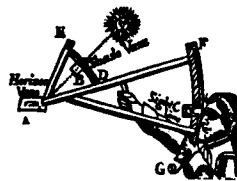
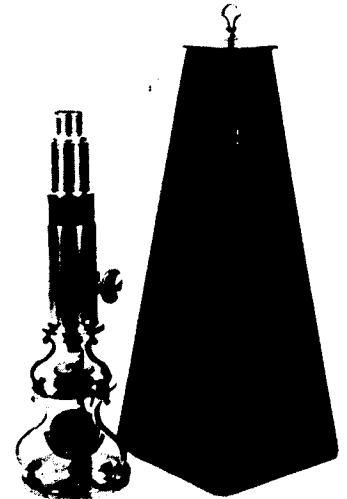
\$ 200

133. RACK AND PINION FOCUSSING CULPEPER - English, c. 1800, unsigned. Bright lacquered brass (part original, part restored finish) 10 1/4" h (min) extending to 12" by rack and pinion focussing. Circular stage 2" d above 3 1/4" d circular base and 1 1/2" d mirror. The cylindrical body tube is 3" h and the microscope tube 6 1/2" long. The ocular has a Dollond type double eyelens and the 4 original objectives are present. The other accessories include a Bonanni spring stage, light cone, frog plate, and stage forceps. It may be lacking a stage condenser and a live box, but it may not, because these instruments are known to have been sold with various combinations of accessories. Original mahogany case, with accessory drawer, 13" h on 5" x 5 1/2" base. The case is in fine and the microscope in very fine condition noting that the brass collar joining the top of the 3 S-legs is a modern restoration.

This form of microscope was made from about 1790-1830, completing a century from the first invention of the basic design by Edmund Culpeper in 1730. Very similar instruments are shown as Fig. 45 of Billings, Item 113 of our Catalog 115 (signed by George Adams), Item 116 of our catalog 114 (by Jacob Abraham), and Item 106 of our Catalog 110 (unsigned). The quality of all of these is quite similar and thus we are unable to identify the actual maker of the example here.

(7 lbs UP)

\$ 1495



134. GOOD VERNIER COMPASS - American, 2nd qtr 19th c, signed "Benjn Pike & Son, New York./Warranted.". Bright brass, restored lacquer finish, silvered compass dial, base 14 3/4" long, 6 3/4" d compass housing (6" needle), screw driven external vernier for setting in the magnetic variation, one original and one replaced (on the other side) bubble levels, 6 1/2" h screw-on sight vanes, for an overall ht of 8 1/2". Missing its original ball joint and socket for staff mounting. Original walnut case 8" x 15 1/4" x 3 3/4" h in poor condition. The compass is very fine.

Benjamin Pike, Sr. (1777-1863) was born in England and, according to an advertisement in 1884, established his firm in New York in 1804. The first listing to be found in the 1807 NYC Directory. The firm became "& Son" when

Benj. Pike, Jr. entered the partnership in 1831, and "& Sons" in 1841 when Daniel Pike joined. Benj. Jr. left in 1843 to form his own company and the firm name reverted to "& Son" through 1849. Then Gardner came along and it was "& Sons" again until 1867. Then Daniel became "Benjamin Pike's Son", the firm lasting until 1916 although Daniel died in 1983. Meanwhile Benj. Jr. died in 1864 so that his company was in business from 1843-64. We cannot tell if the compass here was made during the 1st or the 2nd "& Son" period. However, it is quite similar to the Benj. Pike instrument illustrated on p. 120 of Smart leading us to favor the earlier (or 1831-41) period.

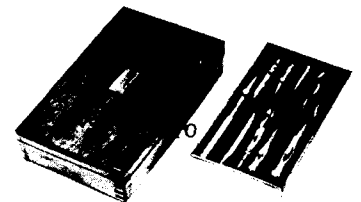
(14 lbs UP)

\$ 695

135. SMALL CASED SET OF DRAWING INSTRUMENTS - English, c. 1900, unsigned. Mahogany case 7 1/4" x 4 1/2" x 1 3/4" h with lift-out tray complete with 9 separate items in brass, steel, and ivory. There is an 180 deg brass protractor in the space under the tray. Fine to very fine overall condition.

(3 lbs, UP, PS)

\$ 79





136. SURVEYOR'S BEAM LEVEL - English, possibly mid 19th c, signed "J. CAIL NEWCASTLE ON TYNE". Solid mahogany beam 1 1/2" w x 1 1/4" h x 15 3/4" long with bright lacquered brass top plate and short (1 1/2" h) folding sight vanes. A spring assembly (also in brass) provides the leveling adjustment for this tripod or staff mounting instrument. A 4" long bubble vial is mounted under the brass top plate (with appropriate openings for viewing).

Original hand dovetailed pine case 3 1/8" w x 2 1/2" h x 16 3/4" long. The case is in surprisingly fine condition and the level is very fine with minor darkening and rubbing of the original lacquer finish.

Goodison lists John Cail at various addresses in Newcastle beginning in 1825, forming a partnership with S. A. Cail, 1851-53, and then by himself again, 1855-8. We know that the firm became "G Son" and it is possible that this transition was as early as 1859. This form of surveying instrument is typically "British" and seems neither to have been made, or even used, on our side of the Atlantic.

(7 lbs, UP, PS)

\$ 165

137. THE 5334 SURVEYING COMPASS, CASED - American, 20th c, signed "KEUFFEL & ESSER CO. MADE IN U.S.A.". Black enameled aluminum body 4 3/4" d with silvered degree scale, 4" needle, and 3 1/2" h folding blackened brass sight vanes. The original 3 1/2" h brass ball socket and joint for Jacobs staff mounting is also present but all its original finish has worn off. The original fabric covered case is 6" x 7" x 1 7/8" h and is in rather worn condition. The compass is very good. K & E also made two smaller versions, one with a 3" needle, and the other with a 3 1/2" needle. The model here has a circular bubble level. There were also models with two small bubble vials and with no bubble levels of any sort.

(5 lbs, UP, PS)

\$ 70



138. A TRANSITING ENGLISH THEODOLITE - 4th qtr 19th c, signed "R. W. Street./Commercl Rd. Lambeth/LONDON". All brass in original black oxidized finish with bright lacquered parts. 11 1/4" h overall (telescope horizontal), 3 1/8" d compass with silvered dial and 2 1/2" needle, readout by opposing 1 arcmin verniers on 5 3/8" d beveled silver azimuth circle. English style 4-screw leveling base. Telescope 10 3/4" long, rack and pinion focussing of objective, 6 1/2" bubble. Original dovetailed mahogany case 10 1/2" x 12 1/2" x 7 1/4" h. Case in sound condition, somewhat rough exterior. The theodolite is in extremely fine condition and complete with provision for an elevation circle which seems not to have been fitted originally.

This is an interesting variant on the standard form of English theodolite. The standards have been extended (note their strange narrow or pointed aspect) so that the telescope can transit (if not completely, at least over the objective end) as is typical of American instruments. The resulting appearance is that of insubstantiality. Indeed, it may have been a design weakness, and for this reason so few examples are known. Taylor 2 lists a Thomas Street (fl 1830-46) at 39 Commercial Road, Lambeth, London. The signed name must then be the later 19th c version of the same firm. We have been informed that the very same instrument is illustrated in Stanley catalogs issued during the 4th qtr of the 19th c. It is quite possible that they were the actual makers of this item, Street being no more than the retailer.

(28 lbs UP)

\$ 560

139. EARLY LEVEL - French, c. 1750, unsigned. Bright brass with restored lacquer finish, 10 1/4" long, 3 9/16" h with 1 7/8" h screw-on sight vanes. The adjustable level bubble mount is 7" long. The mounting socket is 1 1/4" d x 1 5/8" h. Fine leveling is achieved by a tension loaded screw on the underside of the frame. Very fine overall condition. No case. Fig C of Plate 15 of the 1723 (French) edition of Bion's "Traite De La Construction . . ." is of a very similar instrument except that the cut-outs of the bubble tube mount are somewhat more ornate. Stone repeats this plate (unaltered) in his 1723 English edition of the same work. The relative simplicity of the instrument suggests its use for small scale building, drainage, and fortification work. A more precise level would have been required for major canal work.



(4 lbs UP)

\$ 345

140. MINER'S DIP NEEDLE - American, Possibly 4th qtr 19th c, signed "W. & L. E. GURLEY, TROY, N.Y.". Bright lacquered brass with silvered scales, 3" needle in 3 7/8" d x 13/16" thk housing with double windows, 4 1/4" d loop handle, and 4" d brass covers for either side (illustrated with one off and one in place). Very fine overall condition with original finish on all but one cover, which has been relacquered.

These compasses were intended for the detection and tracing of magnetic iron ore. The 1873 Gurley catalog illustrates this instrument with an earlier form of needle. Their catalog of 1902 shows it with the same shape needle as the one here and notes that when it is "unaffected by the attraction of iron, assumes a horizontal line, as shown by the zeroes of the circle." This one, however, seems to indicate the true dip and in our opinion places it at an earlier date.

(3 lbs, UP, PS) \$ 175

141. OCTAGONAL SURVEYOR'S CROSS - French, late 18th c, signed "Bianchi rue du Coq St. honoré, No. 11 a Paris". Bright lacquered brass 5 5/8" h, 2 3/8" across the flats, the octagonal body 2 7/8" h, the socket for staff mounting screws off and screws back on through the circular opening in the top for compact stowage. Fine overall condition, restored lacquer finish on the octagonal faces, original elsewhere. No case.

Bianchi is listed, at the signed address, in the list of makers in the Nacet Collection catalog. The Webster index lists several makers with the same last name in Brussels, Amsterdam (c. 1740-78), and a Bianchi and Sons in Paris, 1831. Earlier, Filippo and Xavier de Bianchi are to be found working in Venice, Italy (1764). Goodison notes a G. Bianchi in Ipswich, England, by 1805 and others in various English cities. Here we have a good example of one of the Italian families of instrument makers which moved northward through Europe, eventually to cross the Channel and settle in England.

(3 lbs, UP, PS)

\$ 195

142. ENGLISH LEVEL FITTED FOR TACHEOMETRICAL READING - Early 20th c. marked "PATENT/STANLEY, HOLBORN, LONDON/27052/BRITISH MADE". Cast and machined brass in green-black oxidized finish with some fittings in bright lacquered brass, 11 1/2" long by 6" h including the 3 screw leveling base. Crossed bubble levels 2 1/4" and 4 3/4", azimuth readout circle 3 3/4" d divided to degrees. Rack and pinion eyepiece focussing. Original mahogany case 13 1/4" x 6" x 7 3/4" h. Case in almost fine and level in near mint condition.

According to the label inside the cover, "The Telescope of this instrument if fitted for tacheometrical [stadimetric] reading, and the points are set 1:100. In taking readings of a distant staff by means of the subtense points or lines in the diaphragm, read every 1/100 foot (or metre) on the staff as being equal to one foot (or metre) of distance from the centre of the instrument, . . .". The maker is the same Stanley located at Gt. Turnstile, Holborn during the 19th century.

(18 lbs, UP, PS)

\$ 245

143. RARE WOODEN SURVEYOR'S COMPASS - American, early 19th c, signed "T. COFFIN, Maker, NEWBURYPORT". Walnut body 13 1/2" long, 6 3/8" d compass housing, engraved paper compass card with 5 1/2" needle, and bright brass (restored lacquer finish) 4 3/4" h screw-on sight vanes. Very fine condition although the compass card is stained and the wooden cross-brace which contained the socket hole for staff mounting is missing from the underside of the compass. No case.

The American wooden surveyor's compass dates from the 18th and early 19th centuries when brass was either very expensive or even not available. Bedini goes into great detail on the extensive use of wood for scientific instruments in early America, pointing out that cost was only one consideration in its selection. Without question, American craftsmen in all fields took obvious pleasure in working the native woods of the New World. The maker, T. Coffin, is not listed in the standard references. However, other instruments by him are known, including the sea captain's gauging rod listed by us as Item 190 of Catalog 119. The North Shore of Massachusetts was the domain of a number of fine instrument makers.

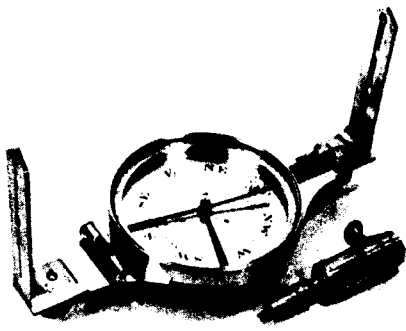
(5 lbs, UP)

\$ 645

144. MILITARY PENDULOUS-SCALE CLINOMETER - American, signed and dated "KEUFFEL & ESSER CO./NEW YORK/ENG. DEPT. U.S.A. 1916/3670". Black oxidized brass with bright brass fittings 2 3/4" d x 5/8" thk. Fitted leather case, made for this form of instrument but marked with a different serial number. Case and instrument in fine condition. The instrument is held in a vertical plane, one sights at an elevated (or depressed) target through the pin-hole sight, presses the scale release button and reads out the scale (1 deg divisions) by means of a mirror across one half of the field of view. The K & E Catalog, 36th Ed, (published 1921) lists this instrument as Item 5721 and notes that it was made for the U.S. Army.

(3 lbs, UP, PS)

\$ 55



145. FINE NEW YORK SURVEYOR'S COMPASS - American, 3rd qtr 19th c, signed "J. Prentice, 66, Nassau St. N.Y.". Bright brass with restored lacquer finish, silvered compass dial, base 10" long, compass housing 4 3/4" d (needle 4"), screw-on sight vanes 4 1/4" h yielding an overall ht of 5 5/8" not including the 3 7/8" long ball joint and socket. The orthogonal bubbles are 1 1/2" and 1 3/4" long. Original hand-dovetailed mahogany case 6" x 10 1/2" x 2 1/2" h in fine condition with a repair to one end. The instrument is in extremely fine condition.

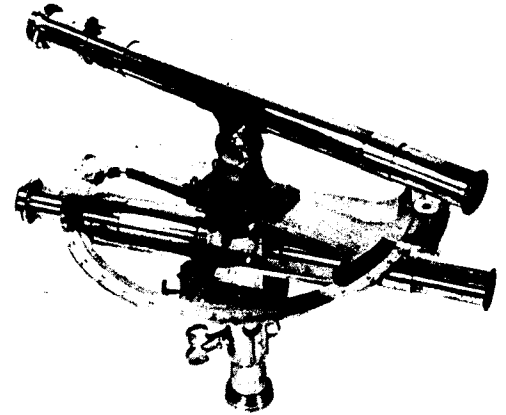
James Prentice (1812-88) was born in England where he served a 7 year apprenticeship to John Beal of London. He came to the United States in 1842 and established (or at least first listed) his instrument making business in 1846. The firm be-

came "& Son" in 1883, incorporated in 1897, and dissolved in 1924. His son, Dr. Charles F. Prentice was the first president (1896) of the Optical Society of New York.

(9 lbs UP)

\$ 650

146. TWO TELESCOPE GRAPHOMETRE BY THE FIRST MAKER OF DIVIDED PRECISION INSTRUMENTS IN ALL OF FRANCE - 4th qtr 18th c, signed "Lenoir à Paris" with the added initials "L. T." and numbered "459" on the underside. Bright brass (restored lacquer finish), 9" h with 10 3/4" long telescopes, 8" d graduated semi-circle with opposing verniers reading to 1 arcmin, tangent screw fine motions on lower (fixed) telescope and on upper (rotating) telescope relative to the scale and lower telescope assembly. Ball joint for staff mounting. Separate 3 1/4" bubble level for initial set-up. Original caboose shaped oak case 7 1/2" x 12 1/4" x 8" h. Case in very good (old age cracks), instrument in extremely fine condition.



Étienne Lenoir (1744-1832) had established such a fine reputation as an instrument maker that (by 1772) de Borda entrusted him with the construction of his reflecting circle, and in 1784 Lenoir developed from it his own repeating circle. He made his own circular dividing engine sometime about

1780-83. This machine has disappeared, and only an incomplete description of it survives. Some details had never been revealed, Lenoir taking these secrets to the grave. It was a machine of great accuracy, however, according to Daumas. He says that an examination of a circle divided on it revealed an error of less than 15 seconds for an arc of 60 degrees. In 1787 Lenoir was appointed certified engineer to the king, one of the original members of this body. He supplied instruments for many of the major French geodetic operations. After 1800, he constructed several high-precision astronomical instruments, and had been involved in making standards of length including the "standard metre". Plates 107 and 108 of Daumas illustrate one of his de Borda reflecting circles and a double telescope repeating circle constructed by Bellet in 1805 upon a design of Lenoir. He must have made but few instruments compared with his English contemporaries. We do not know if the "459" is an actual serial number; and even if it is, at what point did he start his sequence? His workshop of 7 people (large by French standards) did not even come close to Ramsden's of 50. The Nachet and Van Marum collections did not include a single one of his instruments. The National Maritime Museum, Greenwich, has a Langlois graphometre rebuilt by Lenoir, but no original instruments. The Peabody Museum, Salem has none. The one offered here is not only significant in the history of precision instruments, but exceedingly rare as well.

(16 lbs UP)

\$ 2670



147. FULL CIRCLE PROTRACTOR - American, c. 1800, possibly 18th c, unsigned. Bright brass, restored lacquer finish, 10" d, divided by degrees and numbered every 10 degrees. There is considerable variation in the thickness of the hand beaten and worked brass. The numbered scale shows signs of having been re-engraved in places to correct for errors of initial division. Further, the back of the protractor is also engraved with an inaccurately graduated scale. Very fine overall condition in terms of the original.

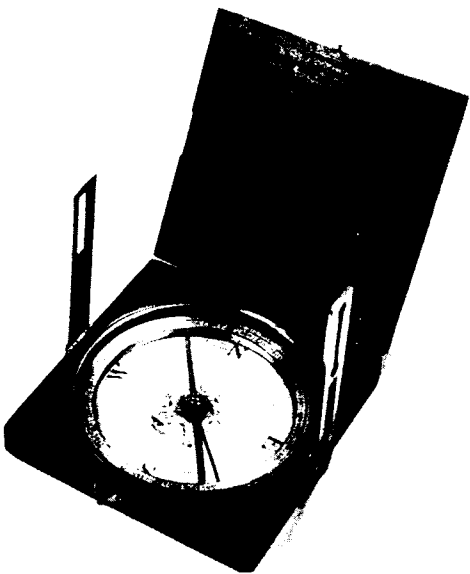
This is the work of someone without a proper dividing machine, possibly using an existing protractor as reference. It is also obvious that brass was in great shortage and quite valuable at the time it was made.

Otherwise it would not have been turned over for another try after the errors on the first side. The second side was also in error and had to have some of the engravings worked out and redone. These factors point to its fabrication either during the colonial period or only shortly after the Revolution.

(4 lbs, UP, PS)

\$ 170

DO NOT BE DISAPPOINTED. If there is a logical second choice to your selection, why not say so. Remember, if an item has been sold before your order, your payment will be returned unless you say otherwise.



151. EARLY SURVEYOR'S FOLDING COMPASS - English, c. 1760-70, signed COLE Maker Fleet Street LONDON". Mahogany body and hinged cover 5 3/4" sq x 1 1/8" thk (closed), 5" d inlet compass with silvered dial and 4" compass needle and bright lacquered brass 4 1/4" h folding sight vanes. Very fine overall condition, the finish on the sight vanes has been restored, otherwise the instrument is complete and original.

The second Benjamin Cole (1695-1755) was a noted maker and several exceptional signed instruments by him still survive. In 1748 he succeeded to the business of the famous orrery maker, Thomas Wright, located at "The Orrery", 136 Fleet Street. His son (the 3rd Benjamin Cole, 1735-1813) apprenticed to him in 1739 and was his partner by 1751. Instruments signed "B. Cole & Son" are known and Goodison places them in the period 1751-66, although one would think that 1755 would be a more logical end date. John Troughton acquired the firm in 1782. Thus we have here one of the longest existing continuous firms of instrument makers in the history of the world, stretching from the late 17th century well into the 20th: beginning with John Rowley (about 1698), Thomas Wright, Benjamin Cole (2nd), Cole & Son, Benjamin Cole (3rd), John, then John and Joseph, then John and Edward, and then Edward Troughton, Troughton and Simms (1826), Cooke, Troughton, & Simms (1922), finally to become part of Vickers.

(5 lbs UP)

\$ 685

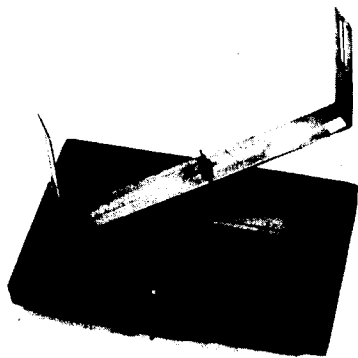


152. MAGNETIC INCLINATION BOX COMPASS - American, c. 1900, unsigned. Blackened brass 2" x 5" base plate with 1" x 3 1/4" x 1 3/8" h needle housing, bright lacquered brass 1 3/4" bubble levels, top window bezel, leveling and adjusting screws. The horizontally pivoted needle is 3" long and there is a longitudinal silvered scale in the bottom of the needle housing graduated in .05" intervals and numbered every 1/4" with the center marked "0". Extremely fine overall condition.

We have been unable to determine the exact purpose of this instrument. The 10-32 thread of the leveling screws establishes its American origin. The needle does not measure the actual inclination (or dip) of the magnetic field for it is nominally horizontal, kept that way by a small weight on the south end of the needle. The scale may have been used to measure the position of the weight as it was moved to compensate for changes in the local inclination.

(4 lbs, UP, PS)

\$ 145

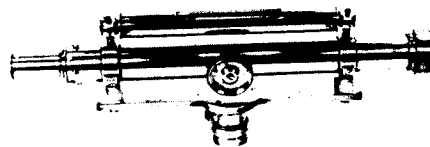


153. WOOD AND BRASS SEMICIRCUMFERENTOR - American, 18th c, unsigned. Rectangular body (possibly cherry-wood) 7 1/2" x 4 1/2" x 7/8" thk with inlet box compass (4 1/2" needle), readout scale of 3 5/8" radius graduated in degrees and marked in 10 degree intervals, "EAST" and "W" stamped at the extremes of the east-west line, "SOUTH" stamped on the compass center line and north marked on the same line by 3 stamped fleur-de-lys. There is a cross-brace on the underside with a socket hole for staff mounting. The pivoted alidade of hand beaten brass is 7/8" w, 7 1/2" long with 3 1/2" h sight vanes. Its lacquer finish is a modern restoration as are the thumb nuts. The instrument is in very fine condition.

It is possible that study of the stamped markings could lead to the maker of this uniquely American surveying instrument, but so far we have been unsuccessful. An example on the same design but differing in detail is listed as item 199 in Brewington, dated c. 1730, and illustrated in Plate XXXIII. Two more 18th century examples are illustrated on pgs. 70 and 111 of Bedini. Still another is to be found as Fig 78 of Bedini T & T. These all tend to be the work of professional instrument makers - the one here certainly is - and intended for reasonably accurate work. The brass alidade shows even greater variation in thickness than is usual leading us to believe that this example could even date from the early 18th c.

(5 lbs UP)

\$ 725



154. FINE LITTLE DUMPY LEVEL - English, 1st qtr 19th c, signed "John King Maker Clare Street Bristol No. 603" and in the same script, the name of the owner "J. Stone Summer Hill Academy". Bright brass with restored lacquer finish, telescope 10 1/2" long (min) extending by draw eyepiece and rack focussing objective to 12 1/2", 5 3/4" level bubble, 7 1/4" long base, 4" ht overall. Extremely fine restored condition. No case.

Goodison lists J. King in Bristol in 1822 and in partnership with a son (J. King & Son) by 1830. Later in the 1st half of the 19th c there were other maker(s?) in Bristol with the name King (see p. 21 of Catalog 117), all of whom may have been members of the same family. A surveyor by the name of John Stone is known to have worked between 1778 and 1813 in the vicinity of Upton-On-Severn which is not too far from Bristol.

(5 lbs, UP, PS)

\$ 270

155. LARGE AND MAGNIFICENT VERNIER COMPASS WITH ORIGINAL TRIPOD AND JACOBS STAFF - American, c. 1885, signed "W. & L. E. Gurley, Troy, N.Y.". Bright brass, restored lacquer finish with silvered compass dial, vernier scales and elevation scales along the edges of the north sight vane, base 15 1/2" long, compass housing 6 7/8" d (6" needle), and 7 1/2" h screw-on sight vanes for an overall ht of 10". The ball and socket joint is now attached to the tripod head but may be screwed onto the Jacobs staff too. Original mahogany case 8" x 16 3/4" x 4 1/4" h in fine condition. The tripod has 54" mahogany legs and the 50" h Jacobs staff, an oak post; both items in fine condition. The compass is extremely fine, missing only the spring-loaded locking pin on the lower socket.

This was the largest vernier compass made by Gurley. The compass housing was rotated from underneath by a pinion drive, an improvement over the exposed tangent screw. The needle lifter is also operated from the underside.

The south sight vane has pinhole vanes which may be rotated over the top and bottom holes. Interestingly, the general form of this instrument as made by Gurley changed but little over a period of a century. Our earliest copy of their catalog, the 15th edition of 1869, illustrates an identical instrument (except for the tangent screw) opposite p. 23 where it mentions that a pinion driven model is also available. The 49th ed, 1942 issue of their manual still lists a large surveyor's vernier compass which looks very much like the example here except that the external surfaces are simpler (obviously less costly to machine), we suspect that some of the finish is now painted, and the inside rack and pinion work has now been brought to the outside. This instrument is, without question, the epitome of the American surveyor's compass.

(2 UP packages, 18 & 20 lbs)

\$ 725

156. SUPERB CIRCUMFERENTOR - English, early 19th c, signed "Bradford Maker. 136/Minories London". Brass, original lacquer finish, silvered compass dial and outer scale of 7 3/4" d, the compass of 5" d, 4" needle, with crossed bubble levels inserted in its face. Inner and outer sight vanes 4" and 4 3/4" h respectively, instrument 5 3/4" h overall. Original dovetailed mahogany case 8 1/2" sq by 3 1/2" h contains original 6" d 360 deg brass protractor as well as circumferentor but appears to be lacking ball and socket joint. Case in very good, instrument in extremely fine condition with outer ring resilvered.

This instrument appears to be the work of the brothers Isaac and John Bradford. Taylor 2 places them at 87 Bell Dock, Wapping 1795-1800, 69 Bell Dock, Wapping 1805-15, and finally at 136 Minories, London 1817-22, the address above. The 4-vane circumferentor is a relatively rare instrument, obviously quite costly to make because of its complexity and the need to achieve accurate alignment of both pairs of vanes. Indeed, it was a design hold-over from earlier times, apparently made and bought more for its impressive appearance than a practical need. The graphometre in France and 2-vane compass instruments in England were significantly less complex and could perform the same measurements.

(12 lbs UP)

\$ 1490

157. SPANISH EGAULT'S LEVEL - probably 4th qtr 19th c, signed "VDA de AMADO LAGUNA ING./No. 1440/ZARAGOZA". Brass instrument with purple-black oxidized finish on most surfaces, bright lacquered screws and adjustment knobs, 18 1/2" long (max extension) 7 1/2" h including 3-screw leveling base. Objective lens 1 1/2" d, rack and pinion focus of eyepiece, 6 3/4" bubble level, tangent screw on azimuth rotation. Telescope reverses in wyes. Original dovetailed mahogany case 17" x 9 1/2" x 7 1/2" h. Case in generally sound condition although it has seen field use, instrument

in fine to very fine condition with minor fading/rubbing of oxidized finish.

This instrument of French design is an unusual combination of wye and Dumpy levels. The bubble level is attached to the frame (can be adjusted) while the telescope by itself can be reversed in the wyes, one of which is screw adjustable. The 3-screw base permits its use on a plane table, also with a screw for tripod mounting. This form of instrument is virtually unknown in our country.

(25 lbs UP)

\$ 340



158. EARLY 19TH CENTURY LEVEL - English, signed "Cary LONDON". Bright lacquered brass with telescope 13 3/8" long (min) extending by draw tube focussing to 15 3/4", 5 7/8" longitudinal bubble on 8 1/8" base with screw adjustment at rear, 4 3/8" high. Original hand dovetailed mahogany case 14" long, 5 1/4" w, 2 3/4" h. Case in fine, level in fine to very fine condition with some darkening and minor rubbing of original lacquer finish.

William Cary (1759-1825) received his early training in the workshop of Jesse Ramsden (as did several of the other fine London instrument makers such as Thomas Jones, Matthew Berge, and John Stancliff). Unlike them, he left Ramsden's firm before Ramsden's death in 1800, setting up his own firm at 272 Strand in 1786. His nephews George and John Cary (sons of the famous cartographer, John Cary) were taken into the business and became its owners upon William's death. The firm continued until the end of the 19th century when it was acquired by Henry Porter, the name being changed to Cary, Porter Ltd. sometime between 1894 and 1904. The signed name on instruments, however, was simply "Cary" throughout the entire period so that dating must be based on design considerations as it was done here. The level of workmanship appears to have been uniformly high throughout the century.

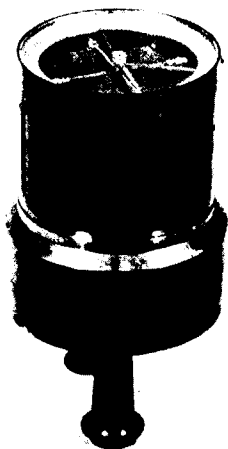
(7 lbs UP) \$ 385

159. EXPORT MARKET SURVEYOR'S COMPASS - English, possibly late 18th c, signed "Proctor, Beilby & Co/LONDON" with the name "JAMES CORNWALL" on the inside of the cover. Bright brass, restored lacquer finish and silvered compass dial, base 15 3/8" long, compass housing 6" d (5" needle), 5 5/8" h screw-on sight vanes, 7" overall ht. Ball joint and socket lacking. Original mahogany case 6 3/4" x 15 1/2" x 2 3/4" h, in about good condition with age cracks and damage to the ends of the case bottom. The compass is very to extremely fine.



The maker of the instrument is a puzzle. The only reference we have to them is a Culpeper microscope by them sold at auction in London by Sotheby's which they dated as 18th century. Taylor 2 lists several instrument makers named Proctor in Sheffield in the 18th and early 19th c. However, there is no way to connect them with a London Proctor. We find no reference to a Beilby anywhere. The compass itself offers dating problems. The needle is easily mid 19th c. The needle lifter, sight vanes, sight vane screws, and machining details are c. 1800 at the latest. The lack of bubble levels is typical of English instruments made for export to America (maybe that is why we developed such an extensive surveying instrument industry). Since the compass was found here we suspect that it may have been imported when new, also suggesting an earlier, rather than later dating. It is possible that the needle was a mid or late 19th c replacement.

(10 lbs UP) \$ 595



160. IMPROVED SURVEYOR'S CROSS FOR THE RUSSIAN MARKET - Possibly French, late 19th c, unsigned. All brass in blue-black oxidized finish with bright lacquered brass fittings, silvered compass and readout scales, black finish to center region of the 3 1/2" d compass, 8" h and lower sighting cylinder 4" d. Sighting slits 90 deg apart on upper rotating cylinder and 180 deg on lower fixed cylinder. Azimuth readout by vernier to 2 arcmin. Original walnut case 4 3/4" sq x 8 3/4". Case in very good, instrument in almost mint condition.

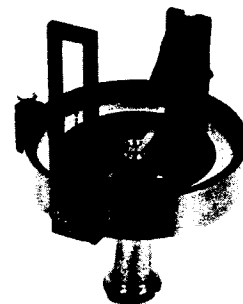
The original version of this instrument was developed by William Jones of W. & S. Jones about 1800. It too had a beveled readout scale which was soon replaced by one directly on the cylinder body, reducing the cost of fabrication. This is the only late 19th century example of this form of instrument we have had which returns to the beveled scale. The Cyrillic lettering on the compass dial suggests that it was intended for use in Russia.

(8 lbs, UP, PS) \$ 260

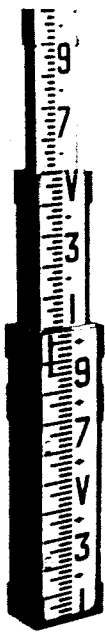
161. PRISMATIC POCKET COMPASS - American, with a price of \$20.00 and a date of April 1873 (4-73) on a label inside the case cover, unsigned. Brass construction in bright lacquered and black oxidized finishes, 3" d with silvered readout scale and 2 1/8" needle, 2 1/2" h folding sight vane, prismatic viewer for simultaneous sighting and readout of compass scale, and 1 7/8" screw-on bracket for staff mounting. Original mahogany case 5 1/2" x 4 1/4" x 1 5/8" h in fine condition except for some warping. The compass is very fine, original finish except on the mounting bracket which has been relacquered. Similar instruments, some of not as high quality, were available from most American and English makers.

(3 lbs, UP, PS)

\$ 145

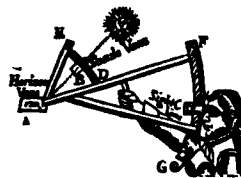
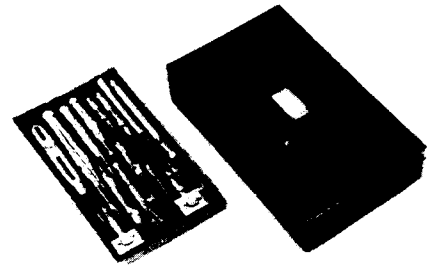


MASSACHUSETTS RESIDENTS: Please remember to add 5% sales tax to the purchase price of your order.



162. POCKET (WELL, ALMOST) LEVELING ROD - English, c. 1900?, signed "MICHELL, COX & Co./ WINDSOR HOUSE, VICTORIA STREET./ LONDON S.W.1.". Mahogany with white painted face and lacquered bright brass fittings, 2 1/4" x 3 1/4" x 15 1/8" h (min) extending in 3 sections to 24". Graduated in large divisions to tenths of feet and then into 50th's. Fine overall condition although the original lacquer finish has extensive pinpoint spotting. We can understand the use of a short rod in city areas where construction already exists, but only the English would have gone to the trouble of making a 2 ft. rod with the complexity of 3 sections which telescope, one within the other, so as to reduce the overall length by 9 inches. (8 lbs, UP, PS) \$ 145

163. NICELY CASED DRAWING INSTRUMENTS - Swiss or German, late 19th c, unsigned. Rosewood veneered case 9 1/4" x 5 3/4" x 1 7/8" h with lift-out tray complete with 15 separate pieces in German-silver, steel, and ivory. These include the 2 fittings for a beam compass and a pair of proportional dividers. There were no rules or triangles found in the space under the tray. Fine to very fine overall condition except that the inner cover lining is somewhat frayed. Such sets were made for sale in the American market and are sometimes found marked with the name of the surveying instrument firm which offered them in its retail catalog. (6 lbs, UP, PS) \$ 150



164. FLOOR STAND 18th CENTURY CELESTIAL GLOBE - English, between 1789 and 1794, signed "WRIGHT'S New Improv'd CELESTIAL GLOBE On which The Stars are correctly laid down, from the Observations of Dr. HALLEY, Dr. BRADLEY, & c" with the label "Sold by Gilbert & Wright No. 148 Leadenhall street London" pasted over "Made & Sold by Wm. Bardin". Globe, with engraved and hand colored gores, 12" d, suspended in bright lacquered brass meridional ring mounted in equatorial ring of 16 7/8" d with semi-circular mahogany support rings, floor tripod stand, giving 42 1/2" h overall. The lower stand is old and stylistically correct, but not original, and has just been substituted for a completely wrong replacement of the missing base. All the surfaces have been cleaned and refinished so that the colors of the globe are bright and clear, the brass is bright, and the wood is nicely finished. Even though there are some rubbed spots and some stains, overall condition is at least very fine.



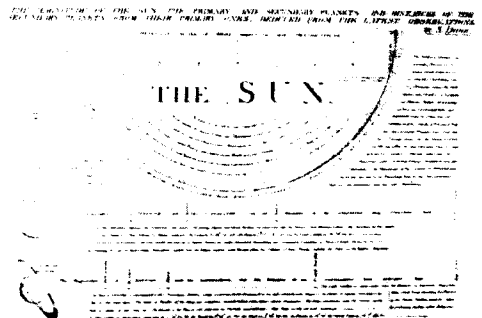
John Gilbert (Jr.), son of John Gilbert of Tower Hill, joined in several different partnerships late in life. His partners, at one time or another, included Gilkerson, Wright, Hooke, and his own son, William. The partnership with George Wright was established in 1789, becoming Gilbert, Wright, & Hooke in 1794. The globe maker, William Bardin, appears to have been in business by 1780 and sometime before 1800, the firm became W. & T. M. Bardin. He must also have worked with George Wright before 1789 as evidenced by this globe. (2 UP packages, 25 lbs & 12 lbs) \$ 1250

165. ENGRAVED CHART - "THE MAGNITUDE OF THE SUN, THE PRIMARY AND SECONDARY PLANETS, AND DISTANCES OF THE SECONDARY PLANETS FROM THEIR PRIMARY ONES; DEDUCED FROM THE LATEST OBSERVATIONS. BY S. Dunn. Teacher of the Mathematical Sciences."

and also marked, "PUBLISHED 12th May, 1794, by LAURIE & WHITTLE, 53 Fleet Street, London." Plate mark 22" w x 14 1/4" h on paper 22 3/4" w x 18 1/4" h, usual centerfold. Very fine condition. Taylor 2 lists Samuel Dunn (1723-94) a teacher of mathematics, and notes, "Besides his numerous books and pamphlets (she lists 19), Dunn published an engraved form for working lunar distances and claimed to have made improvements in the azimuth compass and Hadley's sextant."

(postpaid in the U. S. only)

\$ 75





215. JOHN URINGS MAHOGANY FRAME, BRASS LIMB HADLEY QUADRANT - English, c. 1765, unsigned. Dark mahogany frame, flat brass index arm (without tangent screw) engraved with center zero arcminute vernier, front and back of limb covered with curved brass plates, the front one with a directly engraved scale from -5 deg to 95 deg, 17 3/4" readout radius, the inner edge with grain of wheat decoration. There are forward and back sight vanes and horizon glasses and a set of 2 moveable filters. The horizon glasses are adjustable by typical lever assemblies on the underside of the quadrant. The pivoted cover for the forward sight vane, the top bar of the forward horizon glass housing and a slab of wood from the rear surface of the vertical frame bar are missing, there is silvering left only on the index mirror, and all the brass surfaces have been cleaned and refinished with instrument lacquer. There are some age cracks in the frame. Still overall condition must be rated at least very fine. This is a very impressive instrument. No case.

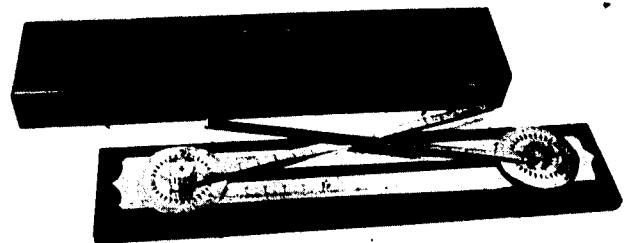
A direct comparison has been made between this quadrant and the all brass one signed "J. Urings, London" listed as no. 26 in Brewington, illustrated in Plate X, and dated c. 1760. The sight vanes of both have square top columns and are stylistically similar but not identical. The Peabody Museum example is a bit more ornate. The index mirror mounting scheme and the horizon glass mounting brackets seem unique in concept to both instruments; we have found no other quadrant by any other maker which is even mildly similar. The only difference is

that the one here is lacking some of the more elaborate ornamentation of the Peabody instrument. The index arm is quite similar as well, just lacking the very small projection at the bottom. Thus we are able to say that the detailed brass work of both instruments follows from the same design concept with some of the more elaborate decorative elements not used for our quadrant. Any last question of origin is answered by a comparison of the engraved scale numerals. They are by the same hand but spaced somewhat in time. The work on our quadrant is the more carefully and confidently executed of the two. It is then our conclusion that our example was made later than the Peabody one, somewhat less ornate to reduce the cost of production, but yet engraved in a more skillful manner as would result from several more years of experience.

Taylor 2 lists John Urings of 174 Fenchurch St., London as having worked between 1735-71 and notes a Gregorian telescope and a Culpeper microscope by him at Leiden. Brewington notes a Davis quadrant by him dated 1752 at the University of Edinburgh and a quadrant dated 1763 at Kronborg. Another signed Davis quadrant has just surfaced in England. Fig 347 of Billings is of a Culpeper microscope signed Urings. The National Maritime Museum, Greenwich, has a brass frame quadrant by him which is quite similar to the Peabody example. This, however, is a very small sample and relatively little has been deduced from it. It is quite probable that he made but few instruments during his lifetime and until more biographical data becomes available, he will remain somewhat of a mystery.

(12 lbs UP) \$ 1980

216. RARE (EXPERIMENTAL?) VERSION OF THE LOWRY-BOWYER TELEMETER - American, signed and dated "THE LOWRY MFG. CO./BOSTON, U.S.A./Pat. 1887, '92, '96" but without the serial number found on the standard brass versions. Aluminum construction on a 6" w x 27 3/4" long mahogany base over which is placed a 2 3/4" h cover. Very fine overall condition without any of the surface etching normally found on aluminum instruments which have seen any sort of use, no less on the open sea. This instrument, another form of the classical trigonometer has two 4 1/2" compass bearing dials, one fixed at the end of the 26" long graduated slotted base plate, the other sliding, and each with graduated pivoted arms of 18 3/8" radius. It was intended for the analog solution of the plane triangle knowing two angles and included side, 2 sides and the included angle, or 3 sides. Thus it was useful for problems both of onshore navigation and gunnery.



(16 lbs UP)

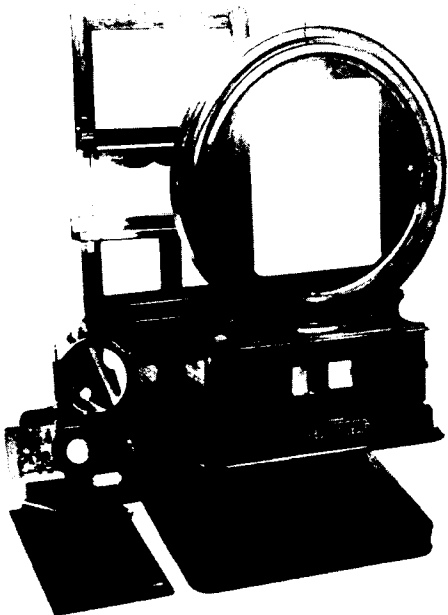
\$ 195



217. DRY CARD BOAT COMPASS - Possibly American, 2nd half 19th c, unsigned. Spun brass bowl compass 3 1/4" d mounted within 4 1/4" d gimbal ring to 5 1/2" sq x 4" h stained pine box with sliding cover. The compass card is 2 3/4" d. The box is in very good plus, and the compass in very fine condition, with original finish throughout.

(5 lbs, UP, PS)

\$ 85

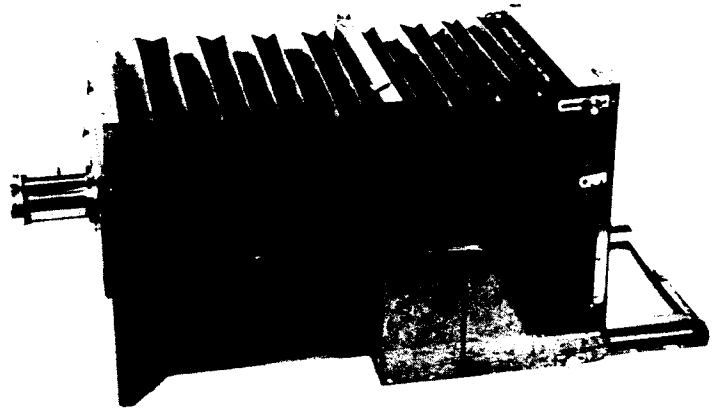


230. EXTREMELY LARGE GRAPHOSCOPE - Italian, middle to late 19th c, signed "PONTIOSCOPIO". Walnut and walnut finished wood construction, base 16 1/4" w x 29 1/2" deep, front lens-board 23" h with a pair of rectangular lenses for stereoscopic viewing and a very large square sided lens for single images with a rectangular aperture (12 3/4" diagonal) in a 16 3/4" d mount which would be capable of rotation except for wood shrinkage. The 24" h rear image easel and front lens board fold for storage or transportation and the upper assembly can be inclined with respect to the base for ease of viewing. Very fine overall condition except for some give in the vertical at the hinges due to wear and the great weight of the units.

This is the largest graphoscope we have ever seen. Note the small one placed along side for comparison. It is the work of Carlo Ponti of Venice, best known for his magnificent viewer, the Megoletoscope.

(48 lbs UP)

\$ 595

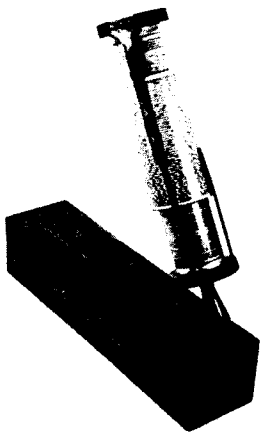


231. EXTREMELY RARE DOUBLE-EXTENSION SIDE BRACKET TAIL-BOARD CAMERA - English, late 19th c, unsigned, but most likely by Meagher. Constructed of hand dovetailed figured mahogany with lacquered brass fittings, 28" long extended (plus 3 3/4" long lens) x 12" w x 13 1/2" h, 5" thk folded, taking 8" x 10" plates. The f8 lens with iris diaphragm is signed "Smedley & Co./Blackburn/12 x 10 Rapid Rectilinear", and because of plugged holes in the lens board is believed to be an early replacement. Rack and pinion focussing of the tilting back. Three original double plate holders. The camera is in extremely fine plus condition; just as elegant as can be.

The major problem with the basic tail-board design is that it does not lend itself to double-extension work. Here, a relatively unique design overcomes this problem by means of a double front board, the forward section sliding on a base board out through the rear frame. Folding and locking brass struts are used to maintain rigidity. The rear of the camera is of normal design and operation. The camera can also be used in a single extension mode with the front board and frame locked together. R. C. Smith in "Antique Cameras", in discussing P. Meagher's invention of the double side bracket camera as an improvement on Captain Shaw's design remarks, "*Later Meagher made smaller cameras with a single side wing and he designed a front extension, carrying the iris panel forward on a sliding base. With brass side struts this formed a fairly rigid extension for copying. His design continued until the end of the century, the long screw later being replaced by double rack and pinion focussing.*"

(28 lbs UP)

\$ 445



232. CASE MOUNTING FULLER CALCULATOR - English, signed "STANLEY, Maker, LONDON" with the serial no. and date, "4879/21" (for 1921). Constructed of brass, mahogany, and varnished cardboard, 3 1/2" d x 17" long, 20" h overall when mounted on its 4 1/4" w x 18" long x 4" h original mahogany case. Very fine overall condition. Original instruction book, showing some wear and tear.

This is the No. 1 model which contains various tables and data on the inner cylinder (the Nos. 2 and 3 models have scales on the inner cylinder). It cost £ 9 15s in 1921. In this instrument, which was designed by George Fuller and patented in 1878, the logarithmic line is arranged spirally on the surface of the cylinder in 50 turns resulting in a working length of 41 ft 8 in. This should be compared with the standard 10" slide rule to realize how great an increase on accuracy was obtained.

(10 lbs, UP, PS)

\$ 245

233. POST-WAR VERSION OF FULLER'S CALCULATOR - (not illustrated) - Signed as above but with serial number and date, "11430/54" (for 1954). Same design but ends and handle now brown bakelite. Instruction book and case. Very fine overall condition.

(10 lbs, UP, PS)

\$ 145

234. EARLY 4-SIDED, 3 SLIDE GAUGING SLIDE RULE - English, signed "RIX" and with an early owners ink signature and date "Josiah Lakin 1766". Boxwood, 1 3/16" x 11/16" x 18" long with a total of 13 scales on the 4 sides, brass insets at points of great use, and tables of constants on the back of two slides. Generally fine to very fine overall condition with a few spot stains and a splinter on one edge. This slide rule, as were many others, was intended for use in the alcoholic beverage industry; several of the constants refer to Ale, Wine, Malt, Spirits, and Cyder. Taylor 2 lists J. (or I.) Rix (fl. 1750-60) in Shrewsbury Court, Cripplegate, London and notes that his name has been found on a watch (1750), a clock (1760) and an excise rule. We have found no reference to the owner. (4 lbs, UP, PS) \$ 375

235. CALENDAR SLIDE RULE - English, 1st half 19th c, signed "B. HARRISSON 11 PRINCES ST. SPITALFIELDS". Boxwood, 19 3/8" long x 1 1/8" w x 5/16" thk, the fixed scale is of the months and their days for all years except leap year (February only goes to 28), the sliding scale for days from 0 to 365. Very fine overall condition except for a repaired break in the slide scale and warping of the wood. It is our opinion that this slide rule was for financial and legal use. Contracts could be set up for 90 days, 120 days, or what have you, and then this slide rule used to tell you the day of the month on which they would come due. This is a sort of simple-minded but extremely rare calculating device. (5 lbs, UP, PS) \$ 225

236. NAVIGATORS GUNTER RULE - Probably English, early 19th c, unsigned. Darkened boxwood 1 3/4" w x 24" long with 16 computational scales, a 10" diagonal scale, and a 24" tenths-inch rule on both sides, brass insets at zeroes and points of great usage. Very good to fine condition with minor warping and edge chipping and some stains. The use of this form of computational device (consisting of the standard set of linear and logarithmic number and functional scales for navigation) is described in Mackay, Bowditch, Moore, etc. Computations were performed by working back and forth on the scales with a pair of dividers (in lieu of the slide and cursor of the modern slide rule). It was derived from the earliest form of computational device using logarithmic scales as invented by Edmund Gunter between 1610-20. (5 lbs, UP, PS) \$ 155

237. NAVIGATORS GUNTER RULE - Probably English, early 19th c, unsigned. Light boxwood 1 3/4" w x 24" long with the same scales as above. Fine to very fine condition with minor warping and edge chipping; really quite nice display condition. (5 lbs, UP, PS) \$ 165

238. VERY RARE NAVIGATOR'S SLIDING GUNTER - English, c. 1840, signed "Blachford & Imray". Darkened boxwood 1 7/8" w x 24" long with a total of 22 scales on both sides, brass insets at the zeroes of several scales. Very good condition noting some stains and a break in the slide which appears to have been glued back together (probably should be repaired with a brass joining plate) and chipping at one end of the slide. This slide rule represents an improvement over the fixed Gunter rule but was little used (and hence quite rare) because of the extreme conservatism of the typical ship's officer. Robert Blachford, son-in-law of John Hamilton Moore, established his Navigation Warehouse about 1804 where charts, textbooks and instruments were corrected, repaired, and sold, and where nautical instruction could be obtained. He was joined by James Imray in 1836, the firm remaining as named above until 1842, later Laurie, Norie, and Wilson joining in revised partnerships. (5 lbs UP) \$ 420

239. INTERNAL REVENUE AGENT'S SPECIAL TWO-FOOT SLIDE RULE - English, c. 1825, signed "DRING & FAGE, MAKERS TOOLEY ST. LONDON" and marked for the diabolical "INLAND REVENUE". Boxwood 1 3/4" x 24" long with 4 scales on one side, the other side blank. Generally fine condition with one ink stain which spreads to both sides. Now they use computers to tax you out of house and home, 150 years ago they used double length slide rules to make sure that you did not round things off in a way which reduced their takings. I have always marveled at the way that governments manage to botch up most everything they do except the squeezing of the last penny of tax out of a man's last drop of beer. At this they are masters. (If it matters to you at this point) Goodison lists Dring & Fage at 248 Tooley St. between 1800 and 1822 and then at 20 Tooley St. to 1845. They seem to have specialized in slide rules and other devices needed for the production, and then taxing of the beer, wine, and liquor industries. (5 lbs, UP, PS) \$ 215

240. NESTED NURNBERG WEIGHTS - Early 18th c, marked with the stork within shield and initials "LA". Cast brass "2" (German) pound lidded master cup with 5 nested cup weights, missing the "1 Lot" center weight. Very fine overall condition with dark brown patina to the master cup. This set was made by Hans Lönhart Abend of Nurnberg who started work in 1707. His weights are well represented in museum collections including Cologne, Zurich, Wellcome Medical Museum in London, Musee d'Art et d'Histoire of Geneva, Streeter Collection of Yale University, and Brussels.



(5 lbs, UP) PS) \$ 285

IMPORTANT REFERENCE BOOKS

There is a packing and shipping charge of \$ 2 for the first book and \$ 1.50 for each additional book shipped to a street address within the 48 states. There is an additional surcharge of \$ 1 per book for any book shipped within the U.S. by U.S. Mail. Outside the U.S. the charge per book is as follows: \$ 7.00 for books "e" and "i", \$ 4.50 for "b", "c", "d", "h", "j" & "k", and \$ 3.00 for "g" & "l". These are new books, not subject to return, and all sales are final.

- b. Campbell, "History and Bibliography of The New American Practical Navigator and The American Coast Pilot". \$ 10
- c. Gould, "The Marine Chronometer". Originally published in 1923 and still the best reference available. Reprint of the original. \$ 34
- d. Wheatland, "The Apparatus of Science at Harvard 1765-1800". A large (9" x 11") book with over 100 illustrations, 6 in color. In many ways, far superior to the picture books on instruments from France because it illustrates items which one can still find and collect. \$ 20
- e. Edmund Stone, "THE CONSTRUCTION AND PRINCIPAL USES OF Mathematical Instruments. Translated from the French of M. BION . . . to which are added the Construction and Uses . . . those invented or improved by the English". 1972 Reprint of the 2nd Ed of 1758. A folio size book (9 1/2" w x 14" h) with 325 numbered pages and 30 full page plates. This is a reprint of the 2nd, and best English edition, of the best early 18th century book ever published on the design and use of scientific instruments. Limited edition of 500. \$ 57
- g. Moskowitz, "THREE STUDIES IN THE HISTORY OF CELESTIAL NAVIGATION * From Simple Quadrant to Space Sextant. * The Method of Lunar Distances and Technological Advance. * The Development of the Artificial Horizon for Celestial Navigation.", cloth bound reprints from "Navigation", the journal of the Institute of Navigation. 49 pages with 44 illustrations. The second title received the Institute's Burka Award in 1971 as the best paper of the year published in "Navigation". \$ 9
- h. R. S. Clay & T. H. Court, "The History of the Microscope". Reprint of the 1932 original and, except for technical details of optical design, still the best reference work on the development of the microscope before the achromatic objective (c. 1810). 163 illustrations. \$ 45
- i. Robert T. Gunther, "Astrolabes of the World". Reprint of the 2 volume 1932 edition now bound in one large book 11" h x 9" w, 609 pages. The last recorded auction sale of an original copy of this book brought over \$ 900 which is understandable because without it, one should not consider collecting astrolabes. This reprint is now out of print too. Special price to current private customers - \$ 135, to all others - \$ 245
- j. "Five Years of Historical Technology I * * * Catalogs 101-110". Bound volume of the first 10 catalogs issued by Historical Technology, over 500 pgs and a great number of illustrations. Special price to current private customers - \$ 60, to all others including all dealers, museums, and libraries - \$ 110
- k. "Five Years of Historical Technology II * * * Catalogs 111-120". Bound volume of the second 10 catalogs issued by Historical Technology, over 575 pgs and a great number of illustrations. Special price to current private customers - \$ 60, to all others including all dealers, museums, and libraries -
- l. R. H. Nuttall, "MICROSCOPES from the Frank Collection 1800-1860". Paper bound book 8 1/4" w x 11 3/4" h with 64 pgs, 60 photographic & 40 other illustrations and figures. In our opinion, this catalog of microscopes, now included in the permanent exhibits of the Royal Scottish Museum, Edinburgh, contains the most perceptive analysis of the early development of the achromatic microscope ever published. \$ 14

AVAIL-
ABLE
1981

CURRENT BOOKS ON SURVEYING

- Contemporary Practice
- Handbooks
- Important Historical Studies (such as Uzes' "Chaining the Land" which has so upset the State of Nevada)
- Reprints of Classical Texts of the Past (including the important 1st Edition of Love's "Geodesia")

Roy Minnick's LANDMARK ENTERPRISES offers the finest selection of new books on the subject of anyone we know. Truly interested readers may write for a free copy of his latest catalog:

Landmark Enterprises
10324 Newton Way
Rancho Cordova, Calif. 95670