

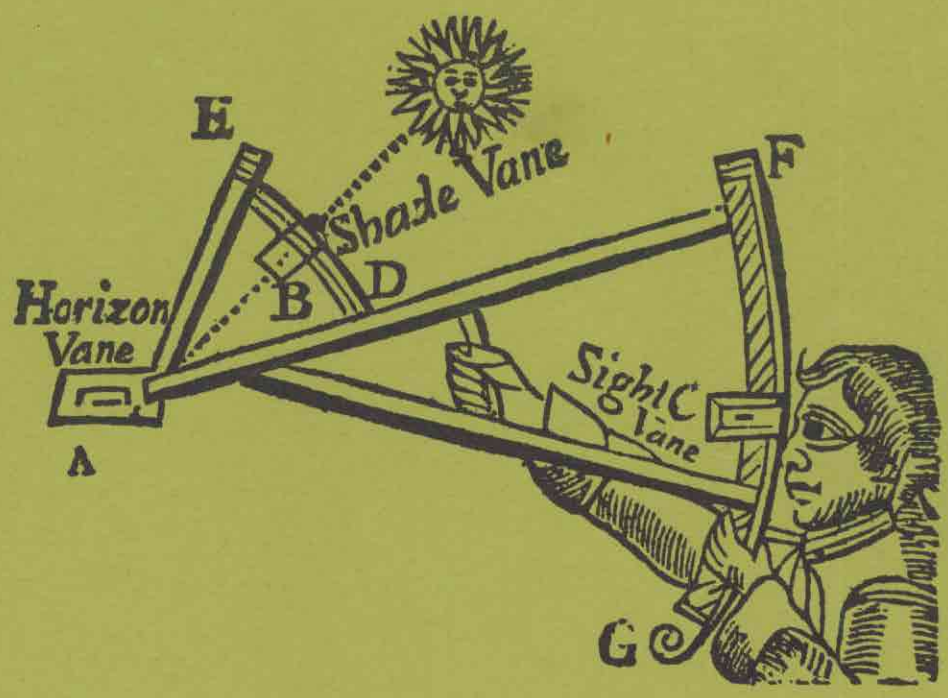
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Spring 1975

One Dollar

Historical Technology

Catalog 110



HISTORICAL TECHNOLOGY, INC. SAUL MOSKOWITZ, PRESIDENT
 6 MUGFORD STREET MARBLEHEAD, MASSACHUSETTS 01945
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32. "The MICROSCOPISTS' ANNUAL FOR 1879." Number 1, Industrial Publication Co., New York, 1880. Original cloth binding 6 3/4" h, 4 3/4" w; 64 pages. Fine condition. Contains advertisements, tables of varying use to microscopists, and lists of microscopical societies, instrument makers, dealers, and importers in America and Europe. (postpaid) \$ 10
33. Andrew Pringle, "PRACTICAL PHOTO-MICROGRAPHY.", Iliffe & Son, London, (1893). Original cloth binding 8 1/2" h, 6 3/4" w; pgs. 159, (1), iv, (6). Fine condition. An early work on the use of the new dry plate for microphotography. Chapters on equipment, photographic materials, and techniques, some text illustrations, and 12 pages of advertisements. (postpaid) \$ 20

Presentation Copy

34. Andrew Pritchard, "THE MICROSCOPIC CABINET OF SELECTED ANIMATED OBJECTS; WITH A DESCRIPTION OF THE JEWEL AND DOUBLET MICROSCOPE, TEST OBJECTS, & c.", Whittaker, Treacher & Arnot, London, 1832. Original board covers 9" h, 5 3/4" w; 247 pages and 13 plates, 12 of them engraved and most beautifully hand colored. Very fine overall condition except for cracks along the outside hinges. Presentation inscription by the author on flyleaf. See "Remarks" for further information about this book. (postpaid) \$ 165
35. Hermann Schacht, "THE MICROSCOPE AND ITS APPLICATION TO VEGETABLE ANATOMY AND PHYSIOLOGY.", 2nd Ed, Samuel Highley, London, 1855. Original cloth binding 8" h, 5" w; pgs. xvii, 202. Generally fine condition. This is a modification of the original translation from the German through the addition of chapters on the laws of optics, English microscopes, accessories, and techniques and the elimination of information on Continental microscopes. The publisher was also a seller (and possibly a maker) of microscopes. Ex library copy. (postpaid) \$ 16
36. Edward Albert Schäfer, " COURSE OF PRACTICAL HISTOLOGY: Being An Introduction To The Use of The Microscope.", 1st American Ed from the 1876 London Ed, Henry C. Lea, Philadelphia, 1877. Original cloth binding 7 3/4" h, 5" w; 304 pages plus 12 page catalog of the publisher. Binding very good, contents fine. This book contains detailed instructions for the preparation of objects for the microscope and their examination, but not very much on the microscope itself. Ex library copy. (postpaid) \$ 15
37. J. H. Wythe, "THE MICROSCOPIST: A MANUAL OF MICROSCOPY, And Compendium of the Microscopic Sciences; . . .", 4th Ed, Lindsay & Blakiston, Philadelphia 1880. Original cloth binding 9" h, 6" w, pgs. xii, 17-434, 16 page catalog of the publisher, with 27 numbered plates and 252 figures in total. Contents weak in binding, otherwise fine condition. In the preface it is noted that the first edition of this work was published in 1851. The author now (1880) a professor at the Medical College of the Pacific, San Francisco, was also author of the little book "Curiosities of the Microscope" (1852), and so was probably one of the earliest American authors in the field. Ex library copy. (postpaid) \$ 26

SURVEYING

38. Buff & Buff Mfg. Co., (Catalog) "SURVEYING INSTRUMENTS For Civil and Mining Engineers", Jamaica Plain, Boston, 1928. Original cardboard covers 9" h, 6" w; 126 pages. Fine condition. Illustrations of the many Buff surveying instruments. (postpaid) \$ 10
39. Angelo Maria Ceneri, "L'USO DELLO STRUMENTO GEOMETRICO DETTO LA TAVOLETTA PRETORIANA PROPOSTO, ED AMPLIATO.", Lelio Dalla Volpe, Bologna, 1728. Original vellum binding 9 1/4" h, 6 1/2" w; 76 pages, 11 foldout engraved plates, the large folding engraved frontis plate of the plane table and alidade and the opposite folding descriptive text. Very fine condition with minor foxing and minor worming of spine; a crisp copy. This book with its elegant engravings, is an exposition on the use of the plane table and plane table alidade for surveying. This technique seems to have remained popular, particularly with explorers, right through the end of the 19th century. (In Italian) (postpaid) \$ 95

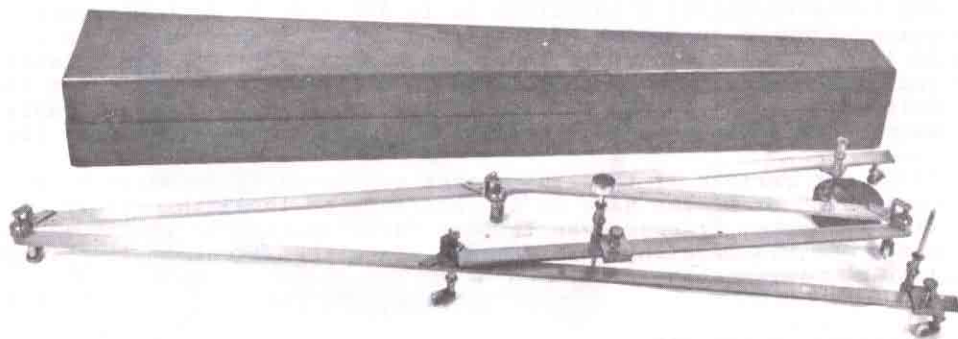
First Edition of a Respected Work

40. William Davis, "A COMPLETE TREATISE OF LAND SURVEYING, BY THE CHAIN, CROSS, AND OFFSET STAFFS ONLY," for the author, London, 1798. Original leather binding 8 1/2" h, 5 1/2" w; pgs. xvi, 3-283, (3), the 6 folding engraved plates. Binding very good with front hinge cracked, but cover tight, and contents very fine except for repaired tear and some foxing of plate 4. The original bill of sale dated 2 April 1800 is included with the book. The list of subscribers shows that a Captain Wilkinson of Philadelphia was the largest single purchaser with 100 copies. The book proved popular and many editions were printed. Davis was also an author of a *The Use of The Globes*. (postpaid) \$ 60
41. William Davis, "A TREATISE ON LAND SURVEYING, BY THE CHAIN, CROSS & OFFSET STAFFS, In Four Parts. Also A Description of the Plan and Map Meters. To which is Added A SUPPLEMENT, containing METHODS BY THE PLANE TABLE & THEODOLITE, and Directions, For Conducting Subterraneous Surveys.", 5th Ed, Anne Davis, London, 1813. Original board covers with paper backstrip (rough condition) 9" h, 5 3/4" w; pgs. xix, (1), 393, (1), 9 engraved plates (many foldout), the frontis portrait, and the foldout table. Pages uncut, contents in fine condition. (postpaid) \$ 30

42. Octavio Fabri, "L'USO DEL LA SQUADRA MOBILE", 2nd state of 1673 ed, Andrea Gattella, Padova, 1673. Original paper covers 9 1/4" h, 7" w; pgs. (2), 9-100, folding engraved plate of instrument dated 1670 and engraved title page, 25 engraved figures on text pages. Generally very fine condition except for a short tear into p. 43 and an 1/4" d hole in figure VIII. The 1st ed of this work printed in 1598. The Squadra Mobile was a portable surveying instrument of Fabri's innovation. Level was determined by a plumb line and a pair of pivoted alidades with peep sights were used for sightings. Readout was on combined circular and rectified scales so that either angles or trigonometric functions thereof could be obtained directly. The quality of the engravings (many of them pictorial) is excellent. This is a beautiful as well as interesting book. (In Italian) (postpaid) \$ 130
43. Abel Flint, "A SYSTEM OF GEOMETRY AND TRIGONOMETRY, WITH A TREATISE ON SURVEYING;", 7th Ed, Cooke and Co., Hartford, 1833. Original leather binding 8 1/4" h, 5" w; 36 text pages, 162 pages of tables. Covers very good, generally fine condition. This popular American work (1st ed in 1804) was published for over half a century. The changes in the various editions correspond to the increasing sophistication of the art and science of surveying in this country. (postpaid) \$ 18
44. Abel Flint, "A SYSTEM OF GEOMETRY AND TRIGONOMETRY WITH A TREATISE ON SURVEYING; In Which The Principles of Rectangular Surveying, Without Plotting, Are Explained.", 8th Ed, Belknap & Hamersley, Hartford and Cooke & Co., New York, 1835. Original leather binding 8" h, 5" w; 152 text pages, 174 pages of tables. Fine overall condition, hinges beginning to crack at top and bottom edges. (postpaid) \$ 15
45. W. & L. E. Gurley, (Catalog) "A MANUAL OF THE PRINCIPAL INSTRUMENTS USED IN AMERICAN ENGINEERING AND SURVEYING.", 27th Ed, Troy, N. Y., 1888. Original cloth binding 6 3/4" h, 4 1/2" w; 362 pages, many illustrations, and all items priced. A fine copy. (postpaid) \$ 18
46. Keuffel & Esser Co., "CATALOGUE", 34th Ed, New York, 1913. Original cloth binding 9" h, 6" w; 574 pages, hundreds of illustrations, and all items priced. Fine condition except for stain on front cover. (postpaid) \$ 15
47. Josepho Liesganig (Societatis Jesu), "DIMENSIO GRADUUM MERIDIANI VIENNENSIS ET HUNGARICI", Augustinum Bernardi, Vienna, 1770. Original vellum binding (tear in upper left corner of front cover) 9 1/2" h, 8" w; pgs. (20), 262, (2), with 10 large foldout engraved plates, 4 of them of the precision surveying and astronomical instruments used on this survey. Fine overall condition. 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 Cassini family in France. The text includes a full description of the instruments and their use as well as the primary and reduced data of the triangulation together with the corresponding maps. Dumas points out that Schreibelmayr and Ramspeck, the two leading instrument makers in Vienna, constructed quadrants in 1772 for Leisganig, probably for an extension of the work described in this book. (In Latin) (postpaid) \$ 85
48. John Love, "GEODAESIA: OR, THE ART OF SURVEYING AND Measuring of LAND Made EASY. . . AS ALSO How to lay out New Lands in AMERICA, or elsewhere: . . .", 7th Ed, J. Rivington & J. Richardson, London, 1760. Modern leather binding 8 1/2" h, 5 1/4" w; pgs. (18), 196 (text) with many woodcut diagrams in text, 56 pgs. of tables, 8 pg. Appendix on "How to survey by the Chain only:". Fine condition. The 1st edition was published in 1688 just after Love had returned from surveying in America. This was probably the most popular work on surveying of all time for there were editions published throughout th 18th century in England and two at the end of the century in the United States. (postpaid) \$ 75
49. Johann Freidrich Penther, "PRAXIS GEOMETRIAE, Worinnen nicht nur alle bey dem Feld-Messen vorkommende Falle mit staben, dem Astrolabio, der Boussole, und der Mensul, . . .", 3rd Ed, Johann Balthasar Probst, Augsburg, 1749. Original leather binding 12 3/4" h, 8 3/4" w; pgs. (8), 97, (5), 25 foldout engraved plates of instruments and their use, and the engraved frontis plate. Fine overall condition, hinges beginning to weaken but still sound, minor wear to the covers. Penther (1693-1749) became Professor of Mathematics at Gottingen in 1736. He wrote a book on dialling in 1733 but this work (1st edition completed in 1729) was his masterpiece. The third edition (this one) was the last published during his lifetime, although there were later ones. The overall intent of the work was the application of geometrical concepts to measurement. However, most of this edition deals with land surveying and the remote measurements of structures. A fine impressive book. (In gothic letter German) (postpaid) \$ 185
50. L. Puissant, "TRAITÉ DE GÉODÉSIE, OU Exposition des Méthodes Astronomiques et Trigonométriques, appliquées soit à la mesure de la terre, soit à la confection du canevas des cartes et Plans," Courcier, Paris, 1805. Early (original?) leather backed board covers 10 1/4" h, 8 1/4" w; pgs. xxiv, 319, (1), (43) tables, (1), plus the 10 large fold-out engraved plates. Fine condition. The engraved plates depict design details and complete assemblies of a de Borda double telescope repeating circle. Such an instrument was quite capable of the accuracy required for the establishment of a basic geodesic grid, as well as astronomical observations as shown by Bowditch when he used a less accurate de Borda reflecting circle to establish the orbit of a comet. Only in England was de Borda's instrumentation slighted. This book describes and evaluates (mathematically) the various methods used for taking data and the accurate calculation "relativement à la mesure de la terre". After the first two sections which provide an introduction to the subject, fully 260 pages of the last section (Livres III) provide the details of "Opérations Géodésiques" including a description of, and methods for the use of the de Borda circle. This is an important book. (In French) (postpaid) \$ 145

Dand Surveying

138. LARGE IMPRESSIVE PANTOGRAPH BY THE BLACK SHEEP SON - English, late 18th or early 19th c, signed "ADAMS LONDON". Bright brass with original lacquer finish, outer bars 36 1/2" long each and shorter ones 19" and 17". Six ivory wheeled casters. The stationary pivot weight is cloth covered lead 3" d x 1" h. Proportionality scales are engraved on the B and D arms. The instrument is complete in its original



dovetailed mahogany case 37" long x 6 1/2" w x 4 1/2" h. The case is in very good and the pantograph in extremely fine condition. An instrument of this size would have been used for the scaling of large maps or adding details to them from field derived maps and charts.

It appears that instruments just signed "ADAMS LONDON" were made by Dudley Adams (c. 1760-1826) the younger brother of the 2nd George Adams. It is not at all clear why he did not achieve full partnership in the family firm after coming of age (his father died in 1772) since he must have been fully qualified. The quality of those instruments known to have been made by him equals that of those made by his famous father and brother. Goodison provides some information, but not nearly enough to explain what really happened. *"The younger son of the Elder George Adams, Dudley Adams had his own workshop at Charing Cross from 1793. He succeeded to the family business and the royal appointment when his brother the younger George Adams died in 1795. He specialized in astronomical instruments and globes and achieved three patents in 1797, 1800 and 1815 for improvements to telescopes and spectacles. He held appointments to the King and the Prince of Wales. He inherited from his mother his father's manuscripts and copperplates . . . He did not inherit his brother's stock, library, or copyrights (which included his father's), which were sold at auction in 1796 to William Jones. There appears to have been a family dispute between George Adams' widow Hannah and Dudley over the auction."* Yet there must have been something else too. Why did the father leave no legal provision for his younger son? Why did his brother refuse him a partnership? Did he really acquire his brother's business if all the instrument designs which had made the George Adamses famous, were sold out from under him? W. & S. Jones built a fortune on these. We have not been able to find answers to these questions and hope that someday, someone sufficiently impressed by Dudley's work, will do so. Here we are pleased to be able to offer you one of his famous instruments.

(25 lbs UP, Air Freight)

\$ 365

139. GREAT IRON WAYWISER - English, 1st half 19th c, unsigned. Ten spoked iron wheel 22 3/4" d rolls 6 ft in one rev. Wrought iron frame 36" long with wooden handles gives 4 ft overall length. Brass case 3 3/4" sq, 1 3/4" thk with 2 3/4" d window contains differentially geared revolution counter dials. Top edge of box and glass window, replacements, all else original. The top dial turns once for 100 wheel revolutions and the bottom one with one gear tooth more (driven from the same worm) moves one division for each complete revolution of the upper dial. Some loss of original black enamel finish on the iron, still fine overall condition.

This is a rare form of a rare instrument; the way-wiser is virtually unknown in America. It was used for measuring lengths of roads and perimeters of land where the actual distance traveled was needed rather than lengths projected upon the horizontal plane.

(Air Freight)

\$ 535



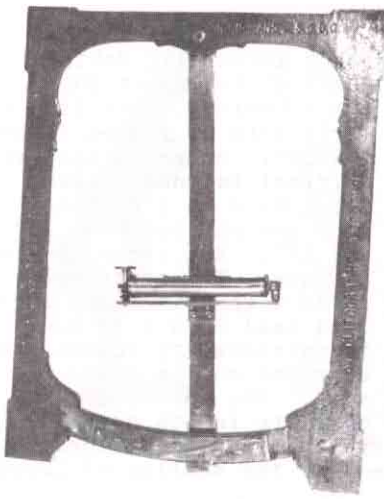
140. PENDULOUS SCALE CLINOMETER - English, late 19th c, marked "WATKIN'S CLINOMETER PATENT 217/J. H. STEWARD LONDON" and serial "No. 3195". Black oxidized finish brass case 2 3/4" x 5/8" thk with a semicircular scale illumination circle on one side. Peep hole in one edge for viewing target and, by half field mirror, the curved pivoted weighted readout scale. The patent awarded Jan 1, 1884, points out that the mirror has a curved (concave) surface. Thus



it acts as a lens enabling the eye to focus on the near scale and distant target at the same time. Original leather case. Case and instrument in fine condition.

(2 lbs, UP, PS)

\$ 45



141. LEFEBVRE'S CLITOGRAPHE - French, 2nd half 19th c, marked "NIVEAU de PENTE PARLANT [Leveling Instrument of Excessive Slope]/ou CLITOGRA-PHE LEFEBVRE/BREVET D'INVENTION de 15 ANS - S. G. D. G. [patent without government guarantee of quality]". Cast iron frame 13" h x 10 1/4" w, pendulous brass index arm with 3 3/4" adj bubble level, and brass readout scale calibrated in millimeters per meter of slope Original dovetailed walnut case 13 1/2" x 11" x 1 1/2" thk, badly warped and so only in fair condition. The clinometer is very fine.

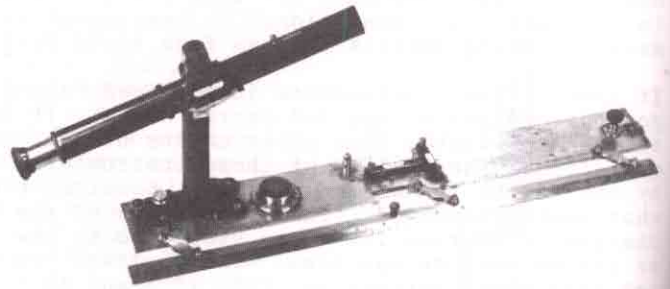
It is not certain if this instrument was actually invented by a "Lefebvre" or if the name is in reference to the 18th century instrument maker Étienne-Jean Lefèvre [also spelled Lefebvre] who was noted for his leveling instruments. In either event it is a fine looking, interesting item.

(10 lbs, UP, PS)

\$ 125

142. TELESCOPIC PLANE TABLE ALIDADE - English, late 19th c, marked "REEVES'/FOLDING ALIDADE/CARY LONDON" and

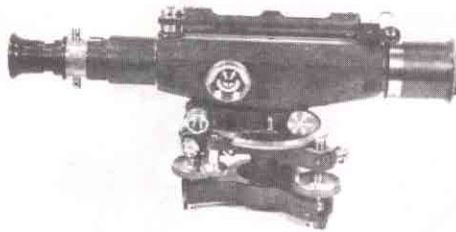
"ROYAL GEOGRAPHICAL SOCIETY 23". Lacquered brass parallel rule base 20" long x 3" w closed upon which are mounted a 1 3/4" d circular bubble level, crossed level bubble tubes (a later modification) and the folding black lacquered telescopic sight 11 1/2" long x 7 1/4" h with its own 2 1/4" bubble level and elevation readout scale (10 arcmin vernier). A 1/250,000 mapping scale rule with diagonals is engraved on the surface of the alidade base. Original hand dovetailed mahogany case 4 1/2" x 3" h x 21" long, showing wear but in generally very good condition. There is a place for a box compass which is not present. The alidade is in generally fine condition although there is some spotting of the finish on the base.



Made by a firm of noted instrument makers (established by William Cary in the 18th c) these plane table alidades seem to have been popular with explorers heading to remote parts of the world. They were light in weight compared to the standard transit and permitted maps to be drawn in the field without the need for recording quantities of numerical data. The Royal Geographical Society inscription speaks for itself.

(10 lbs, UP, PS)

\$ 175



143. 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. Cross bubble levels 2 1/4" and 4 3/4". Azimuth readout circle 3 3/4" d divided to degrees. Rack and pinion eyepiece focusing. 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 is fitted for tacheometrical [stadimetric] reading, and the points or lines 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)

\$ 160

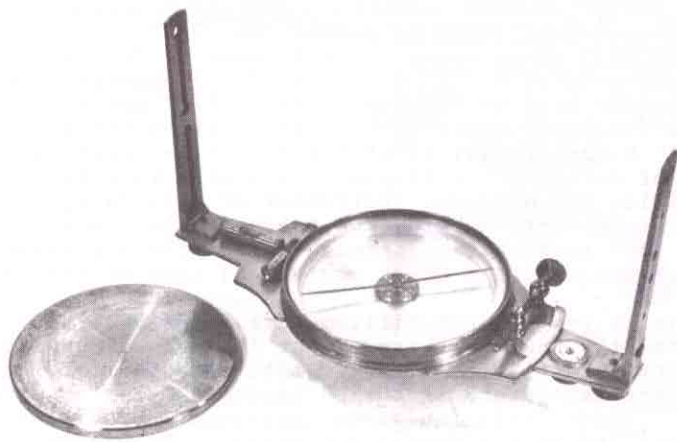
144. SURVEYOR'S COMPASS BY GARDNER - Scottish, c. 1850, dial face marked "GARDNER & CO. 21 BUCHANAN ST./GLASGOW". Brass compass with 6" silvered dial, 5 1/4" long compass needle and 5 1/4" h folding sight vanes located 9 3/4" apart in compass frame. 1" d circular bubble level within dial face (liquid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

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

(10 lbs, UP, PS)

\$ 215





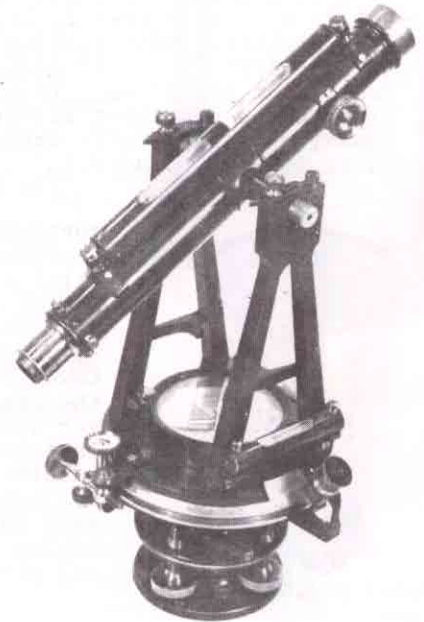
145. LARGE VERNIER SURVEYOR'S COMPASS - American, c. 1890, signed "W. & L. E. Gurley, Troy, N. Y". Bright brass, original lacquer finish, 7" d compass with silvered face and 6" needle, base 15 1/2" long, crossed bubble levels, circular leg counter next to external 1 arcmin vernier for setting in the magnetic variation, screw-on sight vanes 7 3/4" h, 7" d brass compass cover. Overall ht 10 1/4". Ball and socket joint lacking. Original dovetailed mahogany case 16 5/8" x 8 1/4" x 4 1/2" h with the name plate of West Point's Department of Practical Military Engineering, serial no. 12. Case, with age cracks, is in very good, compass in extremely fine condition with lacquer finish in rather good shape except for the cover where it is worn through quite a bit.

in the 19th century. Jonas H. Phelps and William Gurley were partners from 1845-51 at which time Lewis E. Gurley joined the firm. Phelps & Gurleys lasted only 1 year to become (in 1852) W. & L. E. Gurley, the name they have to this day. Throughout this time they produced instruments unique in appearance and of particular elegance. Their large vernier compass changed little in design over the years and the dating of the example here is based upon another instrument from the same source which had an acquisition date on its case. Design considerations, however, could easily place it 20 or 25 years earlier.

(20 lbs UP, Air Freight)

\$ 285

146. A TRANSITING ENGLISH THEODOLITE - 2nd half 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 with rack and pinion focusing 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 (see Item 201 of Catalog 109). 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 significant design weakness and it may be for this reason that so few such examples are known. The signed name has not been found in any of the standard references and it is possible that the firm was a retail outlet for instruments made by various wholesalers.

(28 lbs UP, Air Freight)

\$ 425

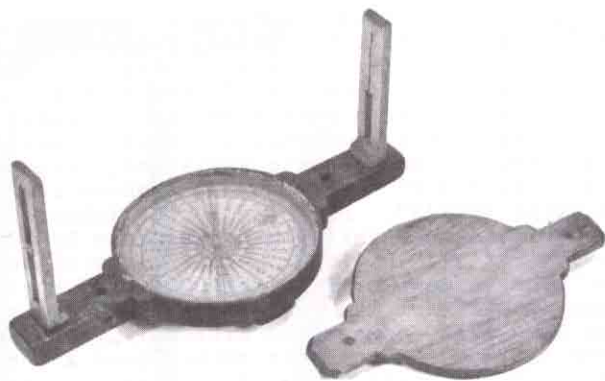


147. IMPOSING ENGLISH WYE LEVEL - WITH COMPASS - c. 1825, signed "Bate, London". Bright brass, telescope 23 1/4" long extending to 27" with rack focusing of objective and draw tube focusing of eyepiece, standing 8 1/8" h including 4 screw leveling base. Level bubble 10" long with boxwood division scale, 11 1/2" separation of Y's, and silvered dial compass 5 3/4" d with 4 1/2" needle. Extremely fine condition.

Taylor 2 lists Robert Bretsell Bate (fl. 1807-43), "In 1807 Bate was apprenticed, and must have started in business about 1815. Before 1840 the firm became Bate and Son. . . . He made official standard weights for Kater after Edward Troughton had refused to, on account of his age." This surveying instrument is of the highest quality as have been his other instruments we have been able to offer including the Most-Improved microscope (Item 144, Catalog 107) and the Standard Yard (Item 180, Catalog 105).

(25 lbs UP, Air Freight)

\$ 435



wooden semi-circumferenter dated 1753 and an undated brass and wood surveyor's compass, such as this one, is possibly the most unique (and somewhat rare) example of instrument making in 18th c America.

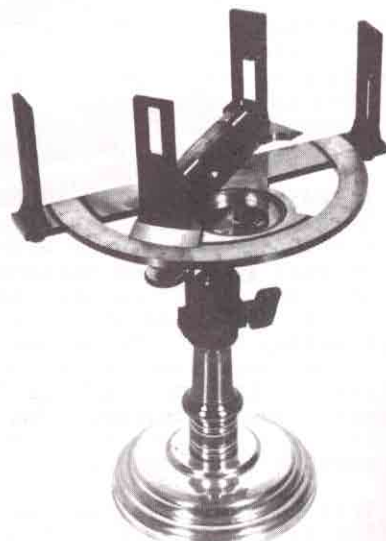
(5 lbs UP, \$ 6 Regis. Mail) \$ 495

148. 18th CENTURY WOODEN SURVEYOR'S COMPASS - American, probably 3rd qtr 18th c, signed "Wm. H(AR)T FECIT/PORTSMOUTH" on one arm. Walnut frame 11 3/8" long, central compass 5 3/8" d with 4 7/8" d engraved compass card (east to the right) and 4 1/2" needle. Later (probably early 19th c) birch sight vanes 4 1/2" h for overall ht of 6 1/4". Pine cover plate also of early 19th c origin. Generally very fine condition for a wooden instrument of this date, the major imperfection being two holes drilled in the arms (one through the letters "AR" of the signature) for the pegs of the cover plate. No case or tripod.

Little is known about William Hart (1734-1812) of Portsmouth, New Hampshire except that he was one of the town's earliest, if not first, mathematical instrument makers and is buried in the old North Cemetery. Smart lists two other instruments by him, a

149. AN ELEGANT GRAPHOMETRE - Either English, or French for the English market, 2nd half 19th c, unsigned. All brass in black oxidized and bright lacquered finish with silvered scales, overall ht 8", fixed sight vanes 6 3/4" apart, rotating ones, 4". Readout circle 5" d with arcmin verniers, 2 3/4" bubble level, inset compass 1 1/2" d, 1 1/8" needle, English compass directions. Ball joint staff mounting with locking azimuth rotation. Original oak case 9" h, 5 1/2" w, 6 1/4" deep. Case in fine, graphometre in perfect, mint condition. This form of instrument has been quite popular on the Continent although much less so in English speaking lands, and practically unknown here. (The display base in the photo is not included.)

(10 lbs UP, \$ 8 registered mail) \$ 325



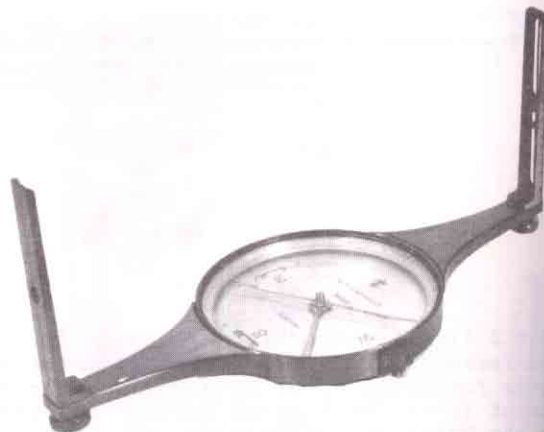
150. IMPROVED SURVEYOR'S CROSS - English, c. 1880, unsigned but probably by Stanley of Gt. Turnstile of London, or their supplier, for the French market. Brass cylinder 3 1/2" d, 4 1/2" h on staff mounting post for 7" overall ht. Silvered compass dial with 2 5/8" needle. Lower part of cylinder rotates with respect to the upper; sighting slits in both. Inset silver azimuth scale reads to 2 arcmin by vernier. Instrument in very fine condition. No case. This form of instrument almost identical in size to the Stanley signed one in Catalog 107, was designed by William Jones of W. & S. Jones about 1800. It is a general purpose instrument for rapid surveying, with limited accuracy, of small land divisions combining the functions of a surveyor's compass, the simple surveyor's cross, and the theodolite.

(5 lbs, UP, PS)

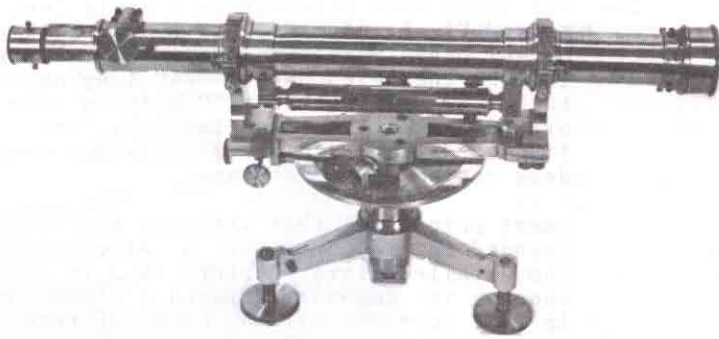
\$ 150

151. THE MODEL 5302 SURVEYOR'S COMPASS - American, early 20th c, signed "KEUFFEL & ESSER CO/NEW YORK". Cast and machined brass in bronzed lacquer finish, silvered dial compass 5 3/4" d with 5" needle, 14" long base with 5" h screw-on sight vanes. Half the ball swivel joint is missing. Original mahogany case 15" x 7 1/4" x 2 1/2" h with name plates of K + E and the U. S. M. A., Department of Practical Military Engineering, at West Point. Case in very good, compass in extremely fine condition.

Keuffel & Esser, founded in 1867, first manufactured surveying instruments in 1885. Their 1913 catalog states: "The Surveying Compasses No. 5300 to 5310 represent the latest construction of these instruments, which we have improved in many features. The compass box is sunk flush with the plate instead of projecting above it. The graduations, to half degrees, are on a raised ring and the needle is of our improved pattern, as described on page 327. One of the detachable sights is graduated and provided with a sliding cross-piece for measuring vertical angles."



(12 lbs, UP, PS) \$ 200



152. THE MOST SPECTACULAR WYE LEVEL WE HAVE EVER HAD - German, probably c. 1900, signed "C. Luttig in Berlin". Bright brass, original lacquer finish, standing 11" h incl 3 screw leveling tripod stand, telescope 20" long with 1 5/8" d clear aperture objective and 6 1/4" bubble level. Azimuth readout to 30 arcseconds by opposing verniers on silver scale inlet into 6 1/4" d bearing plate. Each vernier is fitted with its own magnifier. Original dovetailed oak case 22" long, 10" w, 12" h. Case

is sound with surfaces showing field use, the level is in excellent, near mint condition. Our reference books do not list the maker of this instrument. However his trade card in the cover of the case indicates the receipt of a gold medal, first class, in 1863 from the French Academie Nationale Agricole Manufacturere et Commercialie and several honorable mentions from earlier exhibitions (1844? and 1850?, not clear enough to read). This form of wye level saw greatest application in railroad engineering and this one was probably imported for that very purpose years ago. Although we cannot say that it was more accurate than corresponding English or American instruments it is, without question, far more elegant. Based upon the workmanship displayed, it must have been extremely costly as well.

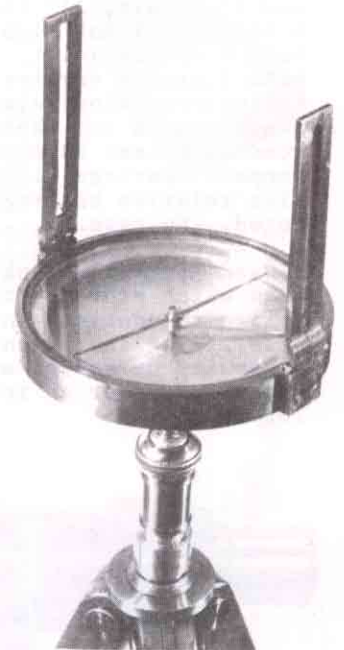
(45 lbs UP, Air Freight)

\$ 395

153. SURVEYOR'S POCKET VERNIER COMPASS - American, 4th qtr 19th c, signed "W. & L. E. Gurley, Troy, N. Y.". All brass, still retaining original lacquer finish, compass 5 3/4" d, 4 1/2" needle, folding sight vanes 4 1/2" h. Silvered dial, with inset bubble levels 1 1/4" long, and outer ring (divided by half degrees). Outside edge of compass cylinder engraved with scale and 1 arcmin vernier for setting in the magnetic variation. Universal ball joint. All original except for tripod coupling which is a modern replacement. Original mahogany case 8" w, 2" h, 6 1/2" deep. Also the original tripod with mahogany legs 38" long. All in very fine condition. This is another example of the fine instruments produced by probably America's best known maker of surveying instruments.

(15 lbs UP, Air Freight)

\$ 225



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

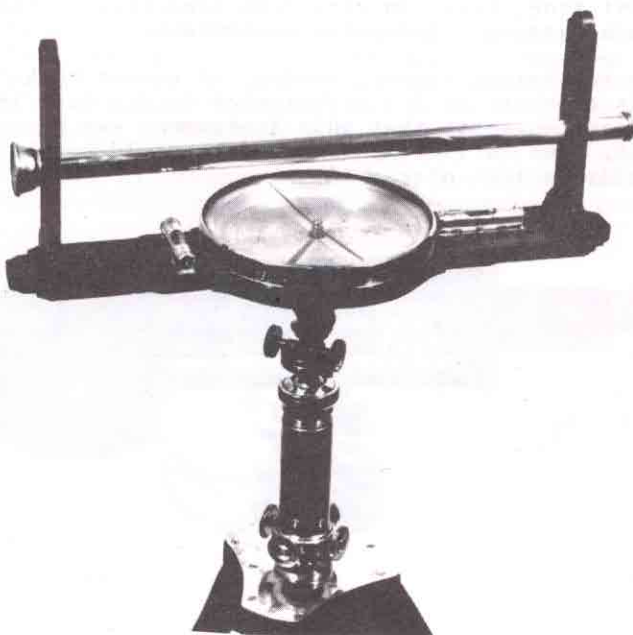
(2 lbs, UP, PS)

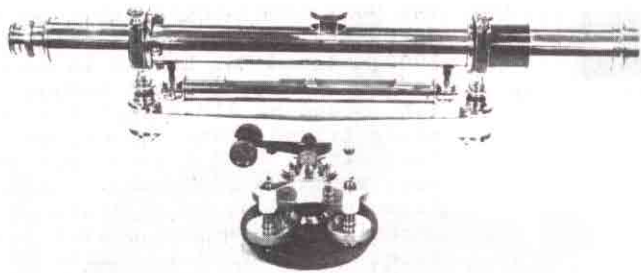
\$ 25

155. AN UNIQUE INSTRUMENT - American, c. 1860, unsigned. This rare prototype sight tube surveyor's compass is of brass and mahogany construction. The large 6 7/8" brass compass (with silvered dial) unmistakably was made by Gurley as were the under mounting bracket, leveling system and azimuth tangent screw (all from the 1860 period). The remainder does not have the appearance of known Gurley instruments. The 18" long base supports 6 1/2" h mahogany sight vanes through which passes the 18 1/4" sight tube. The 9 1/2" h support assembly has a ball socket for coarse leveling, 4 orthogonal screws at the base for fine leveling and a worm-worm wheel for fine azimuth rotation. The original mahogany tripod is 42" h to the brass top plate; the instrument 18" h from this same plate. The compass is in extremely fine and the tripod in fine condition. This instrument appears to have been a unique design, constructed out of standard Gurley components where possible, and the remainder made by the inventor. It is certainly a most interesting combination of wood and brass in a fine surveying instrument.

(2 pcs, 12 lbs and 18 lbs, UP, Air Freight)

\$ 450





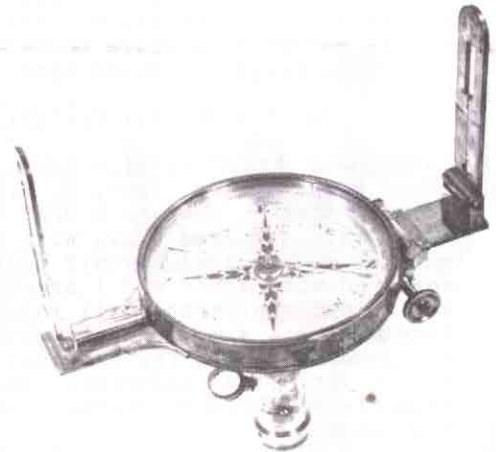
156. WYE LEVEL FROM MID-AMERICA - early 20th c, signed "A. S. Aloe Co./St. Louis./6405". Bright brass with some parts in black oxidized finish, the telescope 17 3/4" long extending to 20", 7 3/4" bubble, 10" between wyes; 8 1/4" overall ht incl 4-screw leveling base. Very fine condition with the objective a correct, modern replacement. No case.

Smart points out that although the firm was founded in 1860 by Albert S. Aloe (1842-1893), "no detailed history before 1912 is possible because the company suffered a disastrous fire in that year and all the books of record were in that year and all the books of record were later they bought them of Gurley. Later they bought them of Wissler of St. Louis, Mo. They were usually engraved A. S. Aloe." If Mr. Smart's implication is correct (that Aloe did not make their own surveying instruments) then this one is probably by Wissler since it has none of the characteristics found in items by Gurley. It is an impressive looking instrument.

(16 lbs, UP, PS)

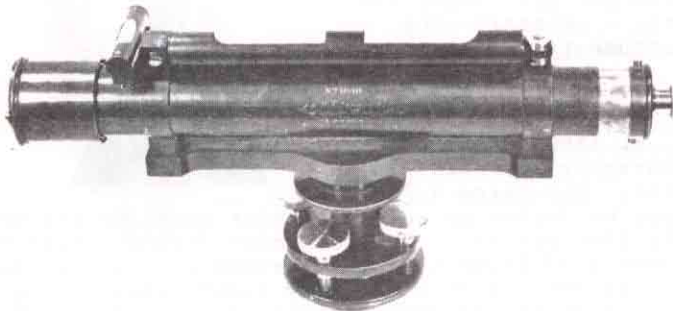
\$ 190

157. THE BEST SURVEYOR'S COMPASS FROM ACROSS THE SEA - English, c. 1830, signed "Troughton & Simms,/LONDON". Bright brass, original lacquered finish (with some darkening, particularly on edges and lower parts), 6" d compass with silvered dial and 5" needle, 11" long base with exterior bubbles and 5 3/4" h folding sight vanes. Overall ht of 11 1/4" incl ball & socket joint. Worm-worm wheel sector fine adjustment with 1 arcmin vernier readout (on compass ring) for use when taking precision relative bearing readings. This instrument functions in the same manner as those which we know as railroad compasses so that it can be used either for magnetic compass bearings (limited accuracy) or more accurate transit-like relative bearings. Fine overall condition, except as noted. No case.



Edward Troughton took in William Simms as his partner in 1826 which provided the continuity which permitted this 18th c firm to continue into the 20th c. (as so few others were able). The instruments produced by them were noted for their ingenuity of design and fine workmanship. This one is no exception. For an interesting comparison with a slightly later instrument see Item 187 of Catalog 109.

(12 lbs UP, \$ 12 Registered Mail) \$ 270



158. Mr. ARCHBUTT'S GREAT DUMPY LEVEL - English, probably 1st half 19th c, numbered and signed, "No. 1040/J. & W. E. Archbutt,/201, Westminster Bridge Road,/LONDON". Black oxidized brass with bright lacquered screws and other fittings, 15" long with 2 1/2" of rack and pinion eyepiece extension, the barrel 1 7/8" d, 8 3/4" long longitudinal bubble and 2 3/4" transverse bubble, 7 1/2" overall ht incl 4 screw leveling base. Original dovetailed mahogany case 5 1/4" sq x 21" long. Case in almost fine, level in very fine condition. This is a massive, impressive instrument.

Taylor 2 lists John Archbutt & Son (fl 1795) at 20 Westminster Bridge Street, London. A recent book of questionable accuracy places the firm of William Edwards Archbutt at 201 Westminster Bridge Road in 1894. The lack of the S. E. postal zone in the signed address suggests that this instrument was produced prior to the London "penny post" postal zones of 1858. The earliest possible date would be obtained from a determination of when the change in street address took place.

(23 lbs UP, Air Freight)

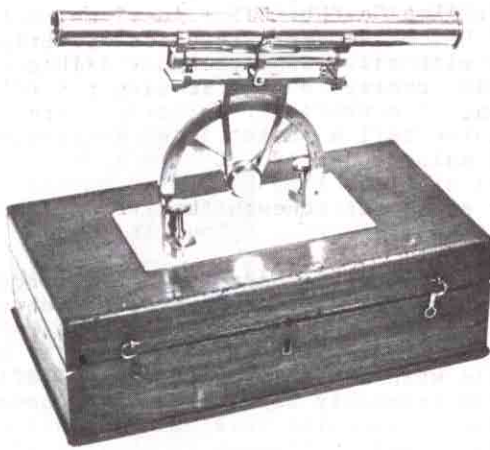
\$ 240

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



(12 lbs, UP, PS)

\$ 165.



160. CASE-MOUNTED ELEVATION TELESCOPE - English, 1st half 19th c, unsigned. Bright brass, telescope 10" long x 7/8" d with 3 3/4" bubble level reverses in Y's of 4" separation. Vertical readout circle of 2" rad has 5 arcmin vernier. Instrument 5" h (telescope horizontal) mounts on 3" x 6" brass plate on top of original hand dovetailed mahogany stowage case 11" x 6" x 3 1/2" h. Notches in case suggest that there may have been another item originally but it is not possible to tell what it was. The instrument is complete as shown. The readout circle suggests an early 19th c origin for the instrument as the telescope rides around it. By about 1825, the practice was to invert the circle and attach it to the instrument, placing the pivot point higher and having the vernier on the fixed part of the structure. This is an interesting instrument in extremely fine condition.

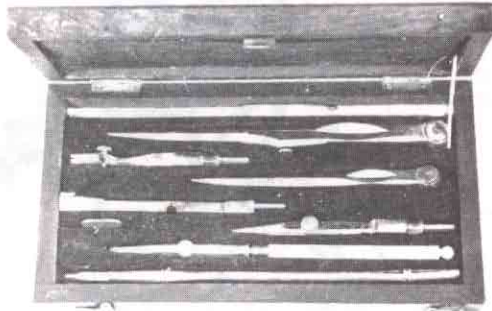
(7 lbs UP, \$ 8 registered mail)

\$ 265

W. & L. E. GURLEY, TROY, N. Y./1918". Mahogany case 3 1/8" x 3 1/4" x 1 1/8" thk, white face compass dial 2 1/2" d with 1 7/8" needle. Graduation by degrees counter clockwise and E-W reversal as required for surveying applications. Very fine condition.

(2 lbs, UP, PS)

\$ 65

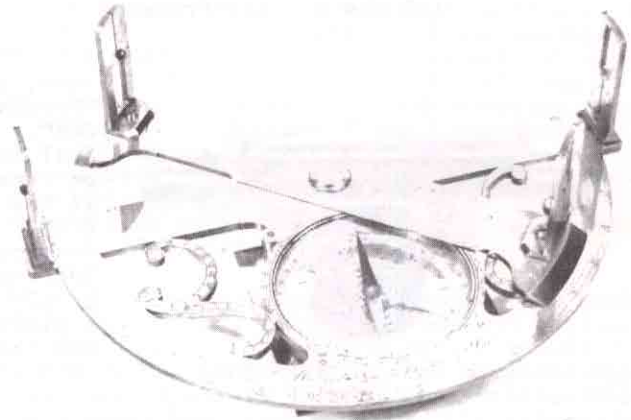


162. BOXED DRAWING INSTRUMENTS - Possibly English, 2nd half 19th c, unsigned. Set of brass, steel and ivory handled instruments (8 pieces) consisting of large dividers with replaceable extension leg, pen leg, small dividers, ruling pen, double ended pencil holder and key wrench; pencil file probably lacking. Original mahogany veneered case 7 3/4" x 4 1/2" x 1" thk. Case and instruments in extremely fine condition.

(4 lbs, UP, PS)

\$ 60

163. A GRAPHOMETER OF EXCELLENT QUALITY - French, 4th qtr 18th c, signed "Meurand Quai de l'horloge a Paris.". Bright brass 11 1/4" long x 5 3/4" w, the pivoted alidade 9 1/2" long, all 4 sight vanes 2 3/8" h ea, giving an overall ht (incl the ball & socket joint staff bracket) of 7". Silvered compass dial 3 3/8" d with 3" needle. Opposing verniers on the alidade read to 2 arcmin. Original shaped leather covered wooden case with name (and 1884 date) of a later owner on the inside. Case sound, although leather going to pieces in places, instrument in very fine condition.



Daumas notes: "The workshop of Meurand is known from several existing instruments. Meurand (or Meurant) was twice proposed as candidate for the body of certified engineers to the King (in April 1788 and June 1789) but was never elected. His workshop was in the quai de l'Horloge. In 1794 he provided instruments - a graphometer, a plane table, two compasses, two sets of mathematical instruments and two protractors for the military mission to Constantinople. Surviving instruments bearing his signature include surveying and mathematical instruments, graphometers with open or telescopic sights, a level, proportional compasses and a protractor. He also made sundials."

(10 lbs UP, \$ 12 Registered Mail)

\$ 465



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

(3 lbs, UP, PS)

\$ 75

165. SURVEYOR'S COMPASS FROM MASSACHUSETTS - American, between 1841 & 1858, signed "H. M. Pool./Easton Mass.". Bright brass, 5" d compass with silvered face and 4 3/8" needle on 13 3/4" long frame, crossed bubble levels, 6 5/8" h screw-on sight vanes; 8" h overall. The tripod socket is not original and the ball & socket joint is lacking. Original dovetailed walnut case 14 1/2" x 6 1/2" x 3" h with the trade label of C. G. King of Boston on the inner cover. The case is sound but somewhat weathered; the compass is in fine condition.

The dating of this instrument is based upon the trade label of Charles Gedney King who was in business under that name between 1841 and 1858. Horace M. Pool (1804-1879) established the firm in 1828 which eventually became J. & H. M. Poole when his son John Murrary (1824-1904) joined the firm (probably about 1855-60 although we have not been able to pinpoint this date). This particularly well proportioned instrument is typical of the

high quality work found in other instruments by the same maker which have been listed in our earlier catalogs.

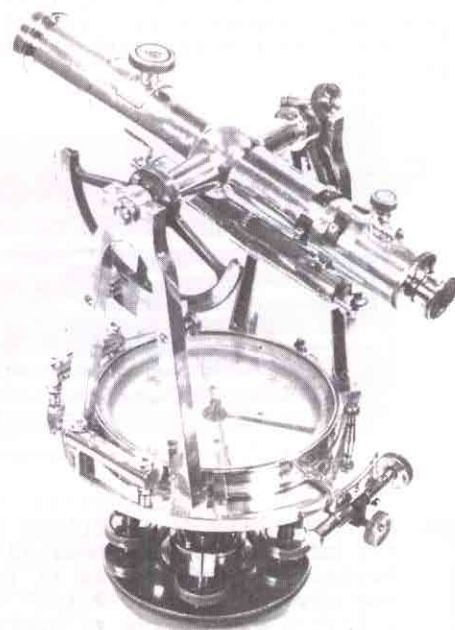
(12 lbs UP, \$ 12 Registered Mail)

\$ 270

166. AN AMERICAN TRANSIT - Early 20th c, signed "KEUFFEL & ESSER CO./NEW YORK" with serial no. 21167. Bright brass with inset silver scales, 5 1/4" d silvered compass dial, some fittings in black oxidized finish, standing 12 1/4" h with telescope horizontal (including 4-screw leveling base). The telescope is 11" long with rack and pinion focusing of objective and a screw driven short lever mechanism for eyepiece focusing, 5" bubble. Vertical readout is 1 arcmin by means of vernier and 2 1/2" rad vertical sector. Horizontal readout by opposing verniers to 1 arcmin on 6 1/2" d azimuth circle mounted within 7 1/4" d base plate. One of the two small bubble levels is a modern replacement as is the objective lens. Very fine overall condition. No case. This is another example of a well made instrument by a firm known to virtually every person in engineering in this country.

(22 lbs UP, Air Freight)

\$ 325



167. FINE COMPACT LEVEL - English, c. 1850, signed "Troughton & Simms, London". Bright brass, original lacquer finish except on repaired sunshade where it has been restored, 6 1/2" h overall including 4-screw leveling base.

Telescope is 11 1/2" long (closed) with 1 5/8" d objective, 6 1/2" longitudinal bubble, 2 3/8" transverse bubble, and rack & pinion focusing of eyepiece. The longitudinal bubble vial and the objective lens are modern replacements. Original dovetailed mahogany case 15 1/2" long, 5" w, 4 3/4" h. The case is in very good, the level in very fine condition with some rubbing of the lacquer finish on the base. This is an earlier version of Item 196 from Catalog 109 and is a very good example of a typical English design by the leading instrument maker of the 19th century. (See the other examples of their work elsewhere in this catalog.)

(15 lbs UP, Air Freight)

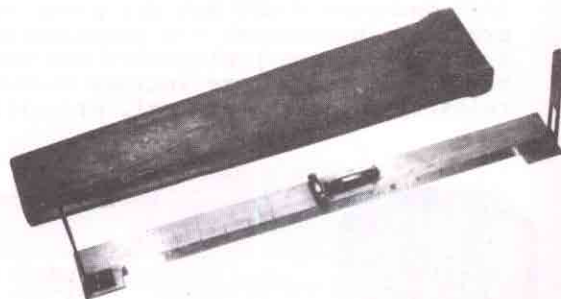
\$ 230

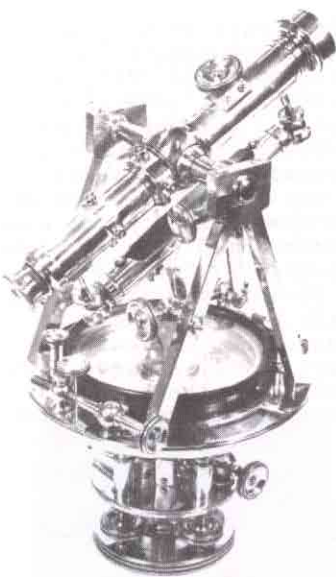
168. LEATHER CASED SIGHT VANE ALIDADE - English, 4th qtr 19th c, signed "C. F. CASELLA & CO. LD./LONDON" and "ROYAL GEOGRAPHICAL SOCIETY". Brass rule 20" long, 2 3/8" w, with crossed bubble levels, 16" divided rule on one edge, 6" long engraved scale with diagonal divisions on face, and 5 1/4" h fold-down black oxidized sight vanes. Original lacquer finish. Leather case 20 1/4" long x 4" w. Case in very good and alidade in fine condition.

Casella & Co, founded by Louis Casella in 1848, produced this instrument for use by the Royal Geographical Society of London. Its engraved serial and RGS inventory numbers should permit one to determine on which expedition it was taken to some remote corner of the world; possibly in forbidden Tibet, or in the search for the source of the Nile. This is a fine surveying item which may have been of great historical importance.

(8 lbs, UP, PS)

\$ 105





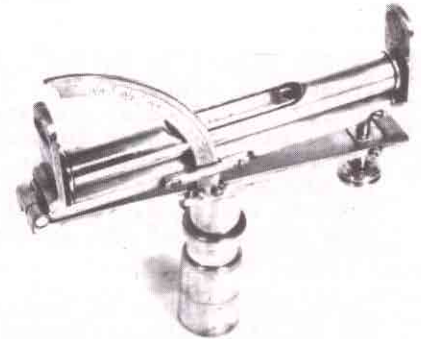
169. PRECURSOR OF THE LIGHT MOUNTAIN TRANSIT - American, before 1862, signed "W. & L. E. Gurley, Troy, N. Y." Bright brass, compass housing in black oxidized finish, 10 3/8" h incl 4-screw leveling base, telescope 8 1/2" long with rack and pinion objective focusing, draw tube eyepiece focusing, 5 1/4" bubble, and slow motion on elevation axis. The 4 1/4" d compass with silvered face, 3 7/8" needle is mounted on the 6 1/2" d base plate. Azimuth readout to 1 arcmin by opposing verniers on 5 1/2" d silvered circle. The elevation axis locking screw is an old replacement, all else original. Original dovetailed mahogany case 12" x 8" x 9 1/2" h. Case in somewhat rough, transit in very fine condition.

The name and date "S. A. Raymond/April 1862" has been found scratched on to the inside surface of the base plate. It is believed that this indicates the date of some repair work suggesting that the instrument could date from the firm's earliest period (i.e. c. 1855). Our earliest Gurley catalog (15th of 1869) shows this instrument as the 4" needle Engineer's Transit which at the time cost \$ 196. This is a beautiful little instrument which was about the best one could get at the time of its manufacture.

(25 lbs UP, Air Freight) \$ 385

170. EARLY POCKET CLINOMETER - European, late 18th or early 19th c, unsigned. Bright brass, 5" h, 5 1/4" long, 4 1/2" bubble level mounted between 1 1/2" h sight vanes on hinged base, bottom plate 5 1/4" long, 5/8" w. Elevation adj by vertical screw. Readout on 2 3/4" rad silvered scale divided in degrees between 0° and 60°. An interesting little item in relatively fine condition considering that it has seen much use.

(3 lbs, UP, PS) \$ 115



171. IMPRESSIVE LARGE TRIPOD REFRACTOR - English, mid 19th c, signed "DOLLOND * LONDON/The Student's/6940". Brass barrel telescope 3 1/4" d by 55 1/2" long (including terrestrial eyepiece, minimum extension), rack and pinion focus, 9 1/2" long x 1" d finder scope, in brass alt-az mount on heavy mahogany tripod with 63" legs. Achromatic objective 3" d, 3 astronomical eyepieces (each with its own sun filter) in addition to the erecting terrestrial eyepiece. Telescope and eyepieces stow in original dovetailed pine box 6" x 9" x 46" long. Box very good, telescope very fine mechanically and excellent optically. Dollond quality is Dollond quality.

John Dollond (1706-61) presented his invention of the high resolution achromatic objective to the Royal Society on June 8, 1758. He and his son Peter (1730-1820) went on to make the finest refracting telescopes produced in the 18th century. Peter Dollond, without male heir, offered to give the firm to his nephew George Huggins (1774-1856) if he first changed his name to Dollond. In 1804 George Dollond became his uncle's partner, and went on to run the business in a way which was a credit to the original Dollonds. He was elected a Fellow of the Royal Society in 1819 and was quite active in some of the most advanced optical work of the time including his combined effort with Peter Barlow on the fluid lens refracting telescope. Even after his death, the firm continued its reputation for superb optical instruments, a reputation established a century earlier.

(REA, Air Freight) \$ 940

172. WATCHMAKER'S SMALL MANDREL LATHE - English, early 19th c, unsigned. Brass frame 5 1/2" long with adjustable tool rest and slide, iron mandrel with brass double drive pulley. Modern walnut display stand 6 1/2" by 3", overall ht 4". Very fine condition.

(3 lbs, UP, PS) \$ 70

