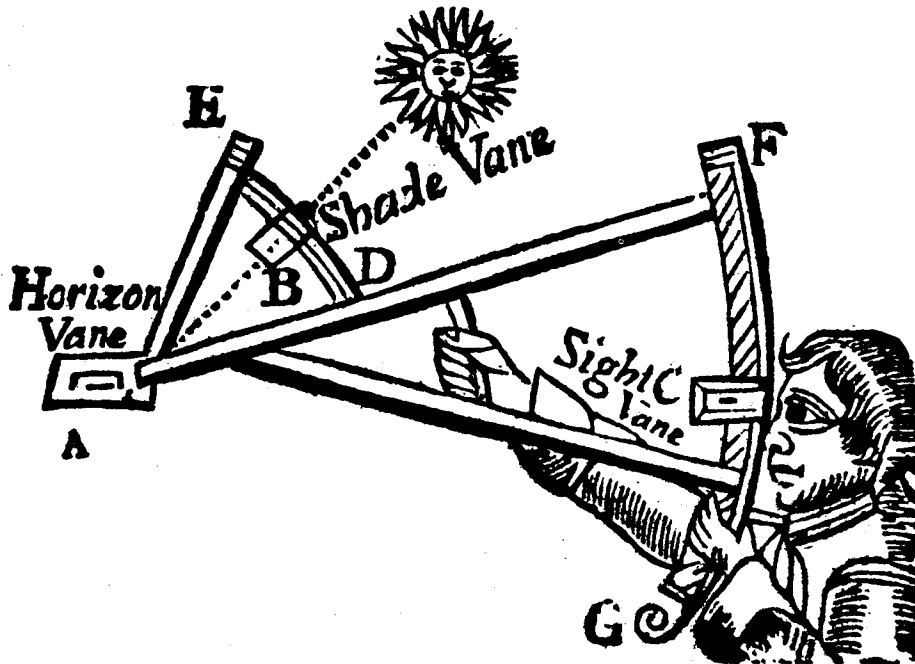


Historical Technology

Catalog 102



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Remarks

I want to thank the many individuals who wrote to express their interest in our first catalog and their encouragement for the future progress of "Historical Technology". It is due to you that this present catalog has been expanded considerably both in scope and size. I want to apologize to all of you who sent in orders only to find the item(s) had already been sold. (This is always a problem when one offers "one-of-a-kind" items.) Hopefully, the extent of this catalog will decrease such occurrences.

To those of you meeting us for the first time, let me say something about this undertaking. For the past 14 years I have worked as an engineer on the design of new navigational instruments for aircraft and spacecraft, and on the mathematical theory of their use. During these years, I developed an interest in the history of navigational and scientific instruments and their use. Slowly, I put together a collection of early instruments and books. However, such collecting was done with great difficulty.

Few dealers in this country carry any significant number of good early instruments. Fewer offered them at fair prices. None really seemed to have an idea of their origin, background, importance (or lack thereof), or use of the items they sold. It was to improve this situation for the interested collector that "Historical Technology" was established.

In the following pages you will find a wide variety of instruments and many of the more meaningful early books in the field. All are fine instruments (or volumes) in fine condition. All are of "display quality". Where necessary, each has been returned to the condition which it would have been in if owned and maintained by the navigator, surveyor, astronomer, surgeon, etc. whose livelihood was earned from its use. There is no place for the "patina of the ages" on a scientific instrument.

There are instruments for the young and beginning collector of limited means. These are of the same high quality as the rest of the catalog, just not particularly rare and are priced accordingly. There are items of "museum quality". The section on "modern marine navigation" has been continued. The five instruments on page 31 are of recent manufacture, but of such quality and condition that they may serve a dual purpose. They represent the "best" in today's technology and deserve a place in any fine collection. However, they can also be taken from their cabinet, carried to sea, used for the precise navigation of any commercial or private boat, and then returned to their place of display.

NEW AREAS

In addition to the fields covered in Catalog 101 such as navigation, surveying, horology, etc., we now can offer other interesting instruments. There are several instruments and early books of interest to the surgeon. On page 24 you will find

a fine group from the heyday of the American photographic industry. On page 8 there are 11 calipers and gauges by the early 19th century English firm of Holtzapffel. Pages 10, 11, 12, and 13 present "Two Centuries of American Surveying". We are able to offer a number of fine early microscopes. On page 30 there are several large engraved 18th century navigation charts. There are now items for most everyone with an interest in some field of technology and science.

EARLY BOOKS

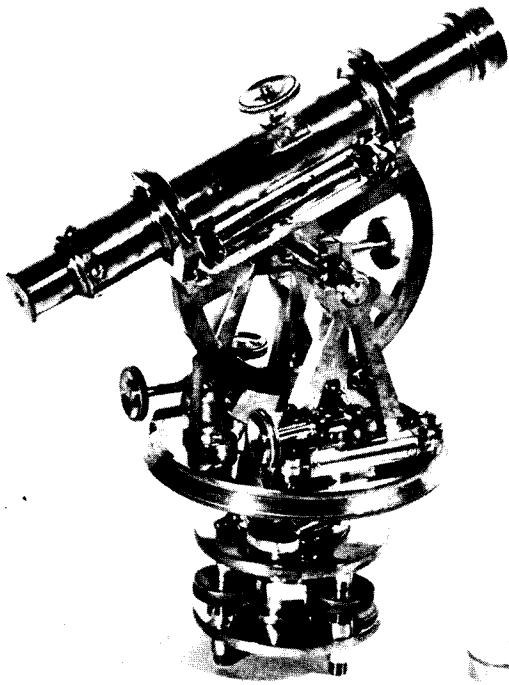
Much interest was shown in the few books offered in Catalog 101. As a result, we present a much expanded book section in this catalog. There are important (and major) books in the areas of navigation, surveying, astronomy, surgery, industrial chemistry, and physics. There is a fine copy of the 4th edition (1730) of Newton's "Opticks". There are four different editions of Blunt's "The American Coast Pilot". The important 1st editions of Mackay's "Navigator", Keith's "Use of the Globes" and Lalande's "Abrégé de Navigation" are included. In addition to all of this, we can also offer the important early works by the man who, essentially, established "American Navigation".

NATHANIEL BOWDITCH

There has been an almost astronomical increase in the interest being shown in the work of Nathaniel Bowditch. First editions of his "The New American Practical Navigator" have risen in price at auction from several hundred to over one thousand dollars (see page 17). It is believed that once it is realized just how rare many of his publications actually are, (original printings on many ran between 200 and 500 copies) one will see prices on these works jump to unheard of levels. Thus we are pleased that we can offer 13 such items, including a fantastically rare (but major) variant of the rare 1st Edition of his "Navigator", as well as several of his almost unknown scientific papers. The student of American science and navigation will realize that this is probably the single largest group of early Bowditch material to be made available in several years.

THE RAREST OF AMERICAN INSTRUMENTS

In Catalog 101 I wrote that I planned to offer an unusually large percentage of American material in future catalogs if I could find a way to do so. At least here I have been able to achieve this objective. Out of a total of 168 items, 70 are American. Included in these 70 are two of the rarest 18th century instruments one will find anywhere. The early 18th century wooden surveyor's compass (page 10) is one of less than the few dozen known to exist. The Benjamin King of Newport, Rhode Island "Davis Quadrant" on page 27 should be the envy of most major museums. All together, there are but a handful of known signed and dated American Davis quadrants.



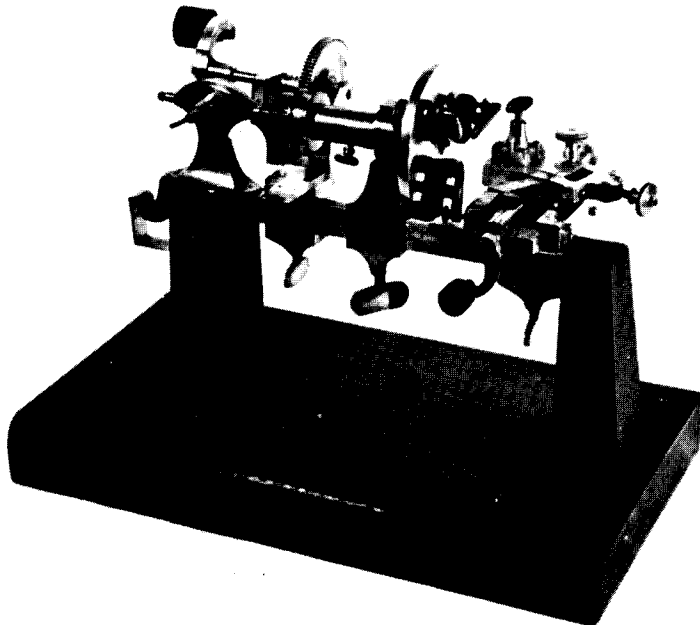
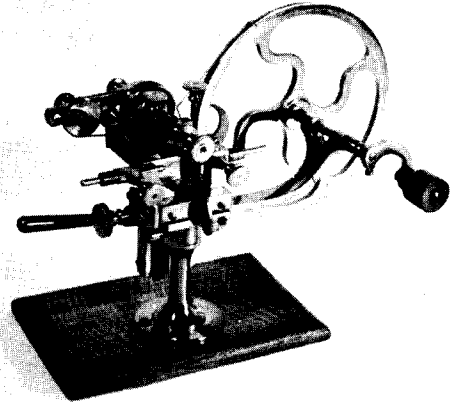
1. THOMAS JONES THEODOLITE - English, c.1820-30. Base plate engraved "Thomas Jones 62 Charing Cross London". Brass with silver dials standing 9 1/2" high, telescope 9" long. Telescope objective focusing by rack and pinion, eyepiece by drawtube. Bubble level 2 1/2" long under telescope which is mounted in "wyes" for reversal (instrument does not transit). Center-mounted vertical circle with inset silver scale 2 1/4" rad. reads to 1 arcmin. by vernier on one side, other side with silvered scale marked "Diff. of Hypo. & Base". Horizontal 5" dia. inset silver scale reads by vernier to 1 arcmin. Tangent screw fitted. Compass dial 2 1/2" dia., 2 1/8" long needle, silvered dial face, outer scale reads counterclockwise through 360° by 1° intervals. Two base mounted levels. Four screw leveling base later modification (about 1850) at which time hor. axis locking screw replaced. Original mahogany case 11" h by 6 3/8" sq. Case is in fine, theodolite in excellent condition.

Charing Cross address from 1816 and this instrument is an example of his fine early work. Years later he could have even been the one who added the present leveling base. Few instruments of this caliber have been available in recent years.

\$ 350

2. WATCHMAKER'S ROUNDING-UP TOOL - English, c.1840, no maker's name. Hand powered machine of brass and steel on oak base for the final cutting, grinding and finishing of watch and small clock gears. 8 1/2" h, 13" w, 6 1/2" deep, 8" by 5" base. Brass drive wheel 6 7/8" dia. Gears up to 1 1/2" dia will mount between adj. centers. Screw driven cross feeds and hand-lever operated vertical motion with indexing and travel stops on all motions. This machine is complete & completely operative. Note that it is several years later than Item 10 of Catalog 101 and shows interesting design changes. In perfect condition.

\$ 225

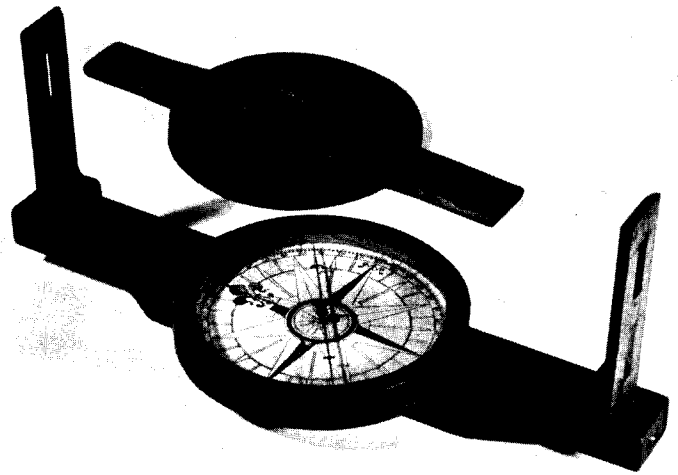


3. MAGNIFICENT CLOCKMAKER'S LATHE - English, c.1840, no maker's name. On mahogany base 18" by 10", 13" h overall. Lathe iron base 13" long, swing of 5". Of iron and brass, hand-crank drive through step-up gearing. Brass faceplate 4 1/4" dia with 3 hold-down clamps and retracting center. Compound tool rest has cross and angular feeds, with motion stops. The lathe is still operative and includes 1 tool bit. The mahogany stand is in nice condition and the lathe is excellent. It and the Rounding-Up tool (above) are fine examples of the watch and clockmakers' machines of the period.

\$ 300

Two Centuries of American Surveying

40. RARE EARLY WOODEN SURVEYOR'S COMPASS - American 1st half 18th cent., no maker's name. Maple (or fruitwood) frame 13" long, 5 $\frac{1}{2}$ " dia at compass, 1 $\frac{3}{8}$ " h. Sight vanes 4" h; 5 $\frac{3}{8}$ " h overall. Original compass needle, 4 $\frac{3}{8}$ " long. Compass glass is a modern replacement with old glass, fragments of the original glass will be sent with the instrument. Paper compass dial, 4 $\frac{3}{4}$ " dia, is drawn in ink rather than printed from an engraved copper plate. One sight vane appears to be maple, the other boxwood or fine-grained oak. A rough-shaped, tie-on, pine, protective cover 10 $\frac{1}{2}$ " long, 5 $\frac{1}{2}$ " wide. There appear to be five stamped characters, about 1/16" h each, on side of compass, but it has not been possible to make them out. The compass is in excellent exhibition condition.



It was presented to Hiram W. Ricker of Poland Springs, Maine by John Roger Wentworth, a direct descendant of Sir William Pepperell, in 1930. At this time it was stated that the compass had been owned about 1635 by Capt. Francis Champernownes and then used in making the original survey of the town of Kittery, Maine. It later came into the possession of the Pepperell family.

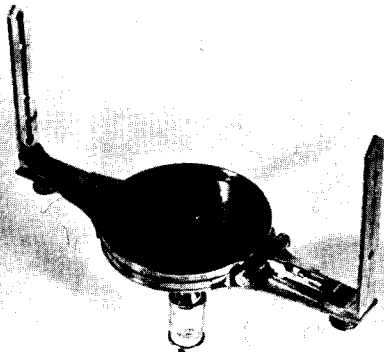
It is doubtful, however, that this compass dates from earlier than the 1st half of the 18th century. A compass by James Halsy of Boston (dated before 1767) in the Peabody collection (no. 201, Brewington) is of very similar design and construction. Now it is known that Sir William Pepperell (1696-1759) born in Kittery, studied surveying and navigation as a young man; later he became a soldier, member of the Massachusetts General Court, and chief justice of the court of common pleas. Since the hand drawn compass card follows the pattern of nautical instruments, it is believed that Pepperell may either have had made the compass himself or had it made for him by a local craftsman rather than a regular instrument maker who would have had a printed card.

Bedini (Early Am.) points out that 18th century American surveyor's compasses in wood are rare; in 1964 he was able to locate but 31 examples. Such compasses are uniquely American. This one is a scarce example of good early instrument making. It would bring credit to any museum or advanced private collection.

(\$ 6 for registered mailing)

\$ 425

41. LEONI SURVEYING COMPASS - American, early 19th c., silvered dial face engraved "G. Leoni, N. York". Dial 4 $\frac{5}{8}$ " dia, 4" compass needle. Silvered edge ring divided by degs, reads 0 to 90 to 0 in both directions. Brass compass frame 12" long, sight vanes 5 $\frac{3}{4}$ " h, overall including ball joint, 10 $\frac{1}{2}$ " h. Two crossed bubble levels, glass vial of one, a replacement. Compass needle locking screw missing. Shows some pitting and darkening, primarily on under side. No case. Overall condition still very good to fine for a rather early and rare item.



The standard references do not list Leoni; he may be related to James and Dominick Lione, London barometer makers (it was not unusual to have different spellings of the same name). G. Leoni may have gone directly to America from Italy without stopping in London.

(6 pounds)

\$ 160

42. THAXTER & SON SURVEYOR'S COMPASS (see illustration at top of next page) - American, c.1830. Brass compass frame 12" long, screw-on sight vanes 5 $\frac{1}{2}$ " h. Compass needle 4" long, dial 4 $\frac{3}{4}$ " dia. Silvered dial face engraved "S. Thaxter & Son/Boston", and with 8 points of the compass. Edge ring divided in 1° intervals reading from 0 to 90 to 0 in both directions. Two crossed bubble levels. Swivel ball joint for staff mounting. In original dovetailed mahogany case 12 $\frac{1}{2}$ " by 6" by 3" h. Case in very good condition, compass in fine to very fine condition.

This compass was first owned by Zachariah M. Cole of Beverly, Mass. who died Sept. 16, 1840. Samuel Thaxter (1769-1842) established his firm in 1792 and when his son Joseph H. entered the business in 1822, changed the name to "Samuel Thaxter & Son". The Thaxters were considered by many to be Boston's leading instrument makers. They made fine navigational as well as surveying instruments, all of which seem to have been of the same high quality as this compass.

(9 pounds)

\$ 190

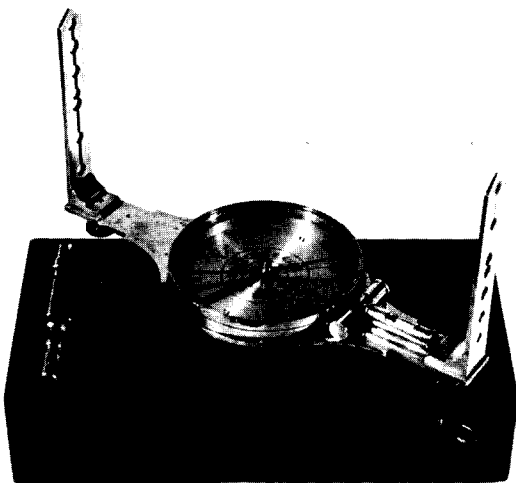
Two Centuries of American Surveying

43. RARE J. & H.M. POOL SURVEYOR'S COMPASS - American, c.1835-40. Brass compass with 6" dia silvered dial engraved "J. & H.M. Pool, Easton, Mass.". Compass needle 5 $\frac{1}{4}$ " long. Dial face with numbered 10^o lines from 0 to 90 to 0 in both directions; silvered edge ring with 1^o divisions. Compass frame 11 $\frac{1}{2}$ " long with 5 $\frac{1}{2}$ " fold down sight vanes (quite rare). Pair of crossed bubble levels. Missing ball swivel joint but otherwise complete, working, and in fine condition. In original pine case 12 $\frac{1}{2}$ " by 7 $\frac{1}{2}$ " by 3 $\frac{1}{2}$ " high with label in cover of C.G. King, 7 Broad St., Boston.

In the history of Easton, Mass. published in 1886:

"In the south part of the town, in the year 1828, J. & H.M. Poole began the manufacturing of mathematical instruments on a small scale. A strong prejudice for foreign-made instruments was only slowly overcome. Poole's work was said not only to equal but even to excel the imported." Pool(e) instruments tend to be rare and of high quality as the one offered here.

(8 pounds) \$ 190



No. 42. Thaxter & Son Compass

44. SCARCE SIGHT-TUBE THEODOLITE - American, 1843, azimuth pointer stamped "GEO. D. VARNEY/PATENTED/JUNE 24 1843". Unusual brass construction with open vertical circle 5 $\frac{1}{4}$ " dia; vernier readout to 5 arcmin. Azimuth scale 5 $\frac{1}{4}$ " dia engraved on top edge of hollow base 3/4" high which houses 4 $\frac{1}{2}$ " long compass needle. 7" h overall. Sight tube is 12 3/4" long with peep hole at one end and rifle-sight-like center post at other (no lenses). Aux peep sight and center post sight attached to main tube for back sightings (since this instr. does not transit). Original wooden tripod with legs 4 ft 2" long. Rough pine field case 12 $\frac{1}{2}$ " by 6" by 9 $\frac{1}{2}$ " h. The tripod is in very good to fine condition and the theodolite is in excellent condition.

George Varney and his invention are not recorded in any of the standard references; it is unlikely that more than a handful of these instruments were ever made. Each was individually made, there is no interchangeability of parts. A different taper was cut for each mounting shaft and each instrument thus will fit properly only on its original tripod. Varney probably worked in eastern Massachusetts or along the New Hampshire coast, for this is where these instruments were located.

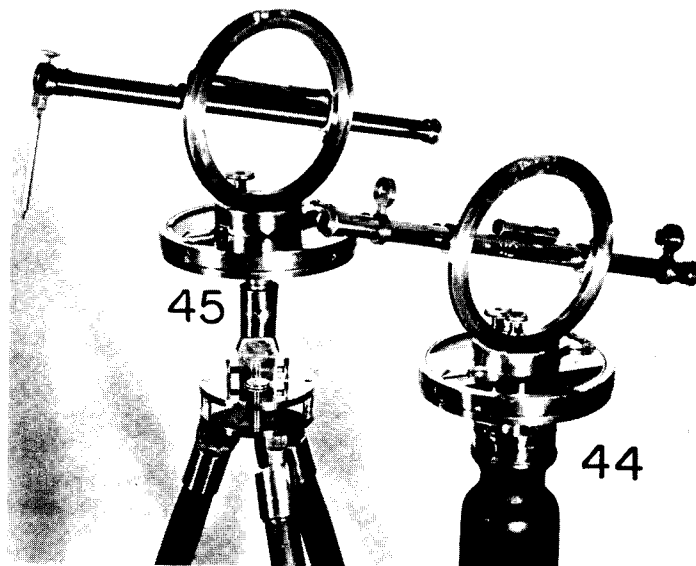
\$ 325

No. 43. J. & H.M. Pool Compass

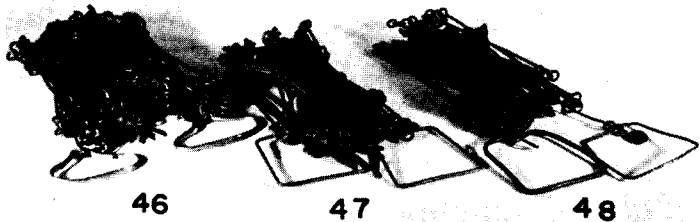
45. IMPROVED SIGHT-TUBE THEODOLITE - American, 1843 by GEO. D. VARNEY. Same general construction as Item 44, but vertical circle is silvered, no reverse sighting vanes, tube mounted bubble level 4 $\frac{1}{2}$ " instead of 2" long, and a folding pointer is attached to end of tube for plane table use. A plane table stand for the instr. is included. The original tripod has a very unusual leveling head. The tripod legs 4 $\frac{1}{2}$ ft long. The original plush-lined fitted case is 14 $\frac{1}{2}$ " long, 8" w, and 7" h. The original leather covering is gone and restoration is needed. The tripod and theodolite however, are in excellent condition.

This instrument was probably made about the same time (just before) the one above, but has several important features missing in the other which would have made it more accurate and more useful in a range of applications. The adj. tripod head would have made leveling faster and more accurate. This is an interesting, fine instrument.

\$ 375



Two Centuries of American Surveying



46. 100 LINK SURVEYOR'S CHAIN - American, c.1850, no maker's name. 66 ft of iron links with brass end handles and brass marker tags. Minor corrosion spotting, but generally in rather good condition. This is the standard surveyor's chain which was in use even before the introduction of angle measurements into surveying. Such a chain has a place in any representative collection of surveying instruments.

(8 pounds)

\$ 45

47. 50 LINK SURVEYOR'S CHAIN - American, c.1860-70, no maker's name. 33 ft of iron links and handles with brass marker tags. Some corrosion etching, but generally clean. This is an example of the half-chain preferred by New England surveyors for in-town land measurement.

(5 pounds)

\$ 35

48. 50 LINK LIGHT-WEIGHT CHAIN - American, c.1860-70, no maker's name. 33 ft of iron links and handles with brass marker tags. Clean but not as bright as above two items.

(4 pounds)

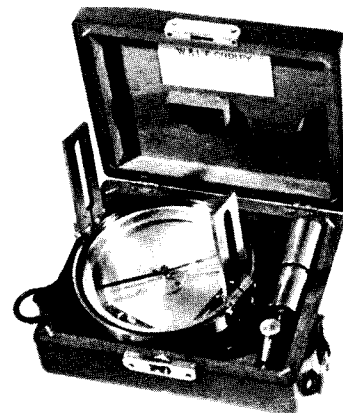
\$ 25

49. CASED SMALL SURVEYOR'S COMPASS - American, c.1900, by "W. & L.E. GURLEY, TROY, N.Y." engraved on silvered dial 4 3/8" dia. 3 1/2" long compass needle. Bubble levels 1 1/2" long set into dial face. Scale reads in both dir. from 0 to 90 to 0 deg. Brass compass body. Folding brass sight vanes 3 1/4" h. Ball joint staff mount included in orig. mahogany case 6 1/2" long, 5 1/2" w, 2" h. Case and compass in excellent condition, the compass representing the last stage in refinement of this class of American Surveying instruments.

The W. & L.E. Gurley co. estab. under this name by the Gurley brothers in 1852 (earlier they were partners in Phelps and Gurleys) is doing business to this day. They are widely known as a major American producer of high quality surveying instruments.

(5 pounds)

\$ 105



50. BRANDIS SURVEYOR'S "WYE" LEVEL - American, c.1900 The support bar engraved "F.E. BRANDIS, SONS & CO./BROOKLYN, N.Y./1999". In brass, 9 1/4" h includ 4 screw leveling base. Telescope 20" long with bubble level 8 1/2" long. Locking screw and spring loaded tangent screw on azimuth axis for fine adjustment. Objective lens focused by knurled knob, eyepiece in draw tube. No case. The instrument is complete and in excellent condition.

Founded as F. Brandis & Co. in 1875, the firm was called F.E. Brandis, Sons & Co. from 1890-1916 and as Brandis & Sons, Inc. from that time on. They became well known for their surveying instruments and during WW I made many sextants as well. In 1922 the Pioneer Instr. Co. purchased control and was bought out, in turn, by the Bendix Aviation Corp. in 1928.

(18 pounds)

\$ 155

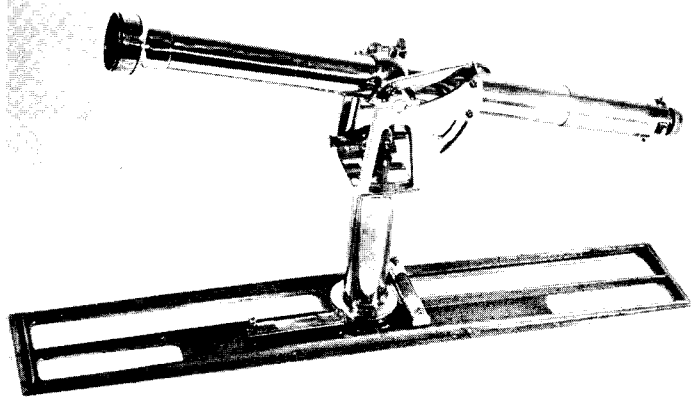
51. GURLEY POCKET COMPASS - American, c.1870, dial face inscribed "W. & L.E. GURLEY, TROY, N.Y." White dial 3" dia, needle 2 1/2" long. Dial reads from 0 to 90 to 0 in both dir by 1° divisions. Mahogany case 3 3/4" sq by 1" h. This is a fine little compass and is representative of a form of instrument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

(2 pounds)

\$ 70



Two Centuries of American Surveying



52. PLANE TABLE ALIDADE - American, c.1900, engraved "Buff & Buff Mfg. Co./Boston 5799". Brass, stands 9½" h. High power telescope 18" long; cast brass base 3 ¾" w by 21½" long. Tangent screw adjustment on elev axis. Scale readout by vernier to 1 arcmin. 3" crossed levels on base. This instrument was used in the field for the direct plotting of maps as sightings were obtained. This fine example by a noted American maker is in excellent condition and is of particular collector interest because of its relative rarity. (No case.)

The Buff & Buff Co. of Jamaica Plain, Boston, Mass. (still producing high quality surveying instruments) was founded in 1898 by George L. Buff (1837-1923) after the dissolution of the firm of Buff & Berger. C.L. Berger and G.L. Buff had joined in a partnership in 1871 which lasted until each formed his own company.

53. FINE SMALL TRANSIT - American, early 20th cent, base engraved "KEUFFEL & ESSER CO./NEW YORK/18393". In brass, 9 ¾" h to top of 3½" dia elev circle. Base plate 6" dia mounted on 4 screw leveling head. Silvered azimuth circle readout by vernier to 1 min, elev circle to 5 min. Crossed bubble levels on base. 4 1/8" long bubble level below 7½" long transit telescope. Mahogany storage case 12½" h, 9½" w, 7½" deep. Case could stand refinishing although wood is sound. The transit is in excellent condition.

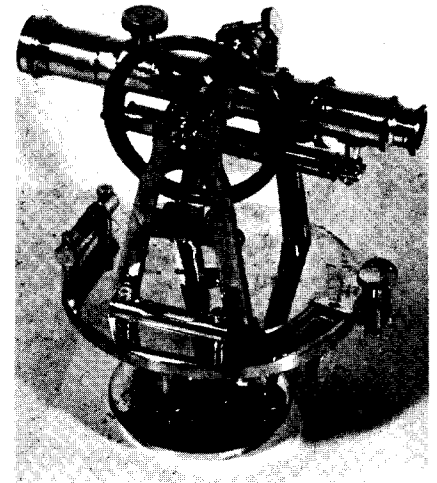
(11 pounds)

\$ 155

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

(18 pounds)

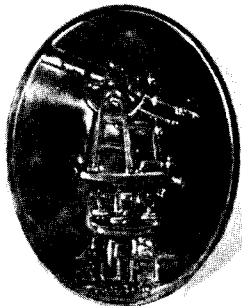
\$ 175



54. BUFF TRANSIT PLAQUE - American, c.1910. Nickel plated brass oval plaque 4" by 3" showing typical surveyor's transit made by the Buff & Buff Mfg. Co. of Boston. This would make an excellent display item to be included in a collection of surveying instruments, particularly if one had been made by Buff & Buff.

(1 pound)

\$ 20



55. MINER'S DIPPING NEEDLE COMPASS - American, c.1870, no maker's name, label in case of "James W. Queen & Co., 924 Chestnut Street, Philadelphia". Used for tracing iron ore. The 2 7/8" needle is mounted in a brass ring of 3 3/4" dia having glass on both sides. A silvered scale of 3" id reads from 0° (horizontal) to 90° in both directions. The support hoop is 3 7/8" dia. Contained in octagonal mahogany case 4 3/4" across the sides and 1½" h. Both compass and case in fine condition.

James W. Queen was born in Philadelphia in 1815 (died 1890). He is first listed as an optician in 1839 and, in 1860, joined with S.L. Fox to establish James W. Queen & Co. This firm produced and distributed instruments under the above name until 1893. Their catalogs listed thousands of different items for surveying, engineering, etc.

(3 pounds)

\$ 120

