

SLIDE RULES

SOLD UNDER THIS GUARANTEE:

Your Money Back IF
You Are Not Satisfied.

THE GILSON SLIDE RULE CO.

Niles, Mich., U. S. A.



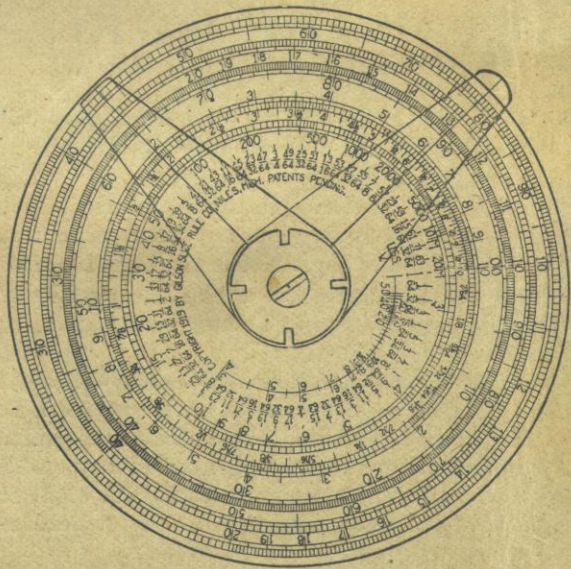
THE MIDGET SLIDE RULE

PATENTED JAN. 17, 1922.

A TIME SAVER FOR THE
ENGINEER, DRAFTSMAN, STUDENT, ACCOUNTANT,
CONTRACTOR, ESTIMATOR, CARPENTER,
CLERK, MACHINIST, ETC.

The Midget Slide Rule will solve any problem in multiplication, division, addition, subtraction and proportion. A Log-Log Scale gives any root (excepting an even root of negative 1) or power of any number. It gives the Logarithms of Numbers and the Sines, Tangents, Cosines and Cotangents of Angles. Fractions and mixed numbers can be added, subtracted, multiplied and divided, without changing them to decimals.

The front side of the Midget has eight scales as follows:- a regular C Scale, a CI [C Inverted] Scale, an Addition and Subtraction Scale, an A or Square Root Scale, a Binary Scale, a Log-Log Scale, a Fraction Scale and a Thread Scale. It is apparent that the Midget is a combination Mannheim, Polymetric, Log-Log, Binary, Addition and Subtraction Slide Rule. It has many other advantages because the eight scales of the Midget will solve many complicated problems with one setting, whereas any other slide rule would require two or more settings.

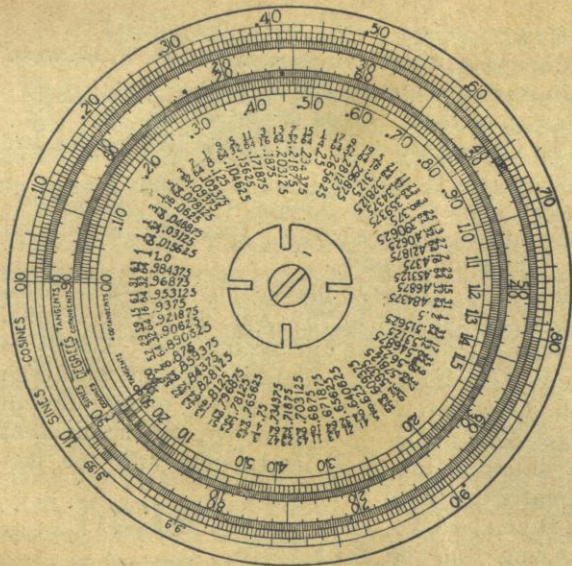


The Midget Slide Rule is constructed to wear for years. There is a brass bushing, $\frac{1}{4}$ In. in diameter, at the center which provides ample wearing surface.

The metal Midget is made of Aluminum covered with white celluloid. Weight 2 ounces. Diam. 4 Inches.

Water, grease, weak acids or alkalis will not affect the rule or erase the scales. If the rule should become soiled it can be easily cleaned with soap and water.

A clear transparent enamel protects the graduations and figures from wear. The scales are



in black on a white back-ground with figures that are large and easy to read. All of the grad-nations of the Midget are engine-divided and will remain accurate.

The Log-Log Scale is divided between 1.15 and 1,000,000. This Scale with the C Scale give the Natural Logarithms and the Log. Scale gives the Common Logs.

The decimal equivalentents of fractions from 1-64th to 63-64ths are given to six decimal places.

A few examples are given to show the scope and capacity of the instrument. The time given is the time that would be constr-umed by a person who is familiar with a slide rule.

EXAMPLES

Find the width of a single leather belt, which will transmit 10 H. P. between two pulleys, each 30 inches in diameter and running 250 R. P.M.

Answer, $4\frac{5}{8}$ " , use a 5" belt. Time, 5 seconds. Solved in one setting.

What is the total stress on 8 Eye Bars, each $6'' \times \frac{7}{8}''$, at 12,000 Lbs. per Sq. In?
Answer, 504,000 lbs. Time, 5 seconds. One setting.

What is the cube root of 709.73? Answer, 8.92 Time 5 seconds, one setting.

Find the value of \$100 placed at 5% for nine years. Interest compounded annually. Value \$163.00 Time ten seconds.

A merchant, whose overhead is 17%, wishes to make 10% net profit. What should be the selling price of an article that cost \$1.75? Ans. \$2.40 One setting.
If a doz. articles cost him \$43.50 what should be the unit selling price? Ans. \$4.97

An illustrated instruction book, "The Slide Rule Manual." is sent with each instrument. Simple and complete directions are given for solving many different kinds of problems with the Midget Slide Rule. A knowledge of the different branches of mathematics may be obtained from these instructions and the usefulness of the slide rule will be greatly increased.

Price of the Midget Slide Rule, postage paid, **\$1.50**

Leather Carrying Case **\$.50** Extra.

Richardson Direct Reading Slide Rules

WITH ENGINE DIVIDED SCALES.

DUE TO OUR NEW PATENT PROCESS of making Metal Scales with black lines on a white background, it is possible to make Slide Rules that are accurate, and that will retain their accuracy indefinitely. This is not possible with wooden slide rules, because wood absorbs moisture, the camphor of the celluloid evaporates and the rule soon becomes useless for accurate work. No such trouble is experienced with Richardson Slide Rules, because the scales and the frame of these rules are made of metal. Acids, alkalis, grease or water will not injure the scales and the rule may be cleaned with soap and water, should it become soiled.

All the slides of the Richardson Slide Rules are interchangeable. Thus, No. 812 may be purchased and as many extra slides as desired. The whole rule can then be changed into a Polymetric, Binary, Log-Log, Add and Subtract or Business Man's depending upon which slides are purchased.

An instruction book "The Slide Rule Simplified", has 100 pages, with 135 illustrations and diagrams for solving the simplest as well as the most intricate problems in Civil, Mechanical and Electrical Engineering formulas. It explains a method for extending slide rule readings to seven or eight figures. The book also explains and illustrates the method of using a slide rule for solving problems in Logarithms and

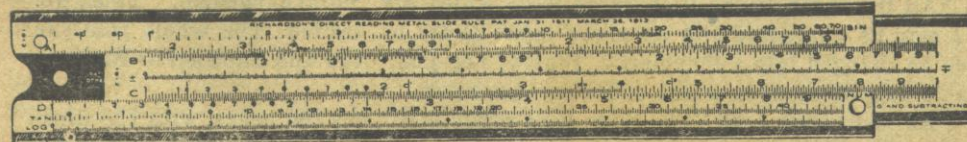
Trigonometry. An instruction book is sent with each Richardson Slide Rule.

The following illustrations are about one-half the size of our regular 10-inch slide rules. Each rule is supplied with a frameless runner and a pocket carrying case.



No. 812. - The above is a facsimile of our RICHARDSON 10-INCH MANNHEIM SLIDE RULE, having A, B, C, D, Log., Sine and Tangent Scales.

Price with case and 100-page instruction book ----- \$3.00



No. 1812. - THE RICHARDSON ADD AND SUBTRACT SLIDE RULE is identical with No. 812, except that the addition and subtraction feature is included. This is the only straight slide rule that will add and subtract.

Price, with case and instruction book ----- \$3.50

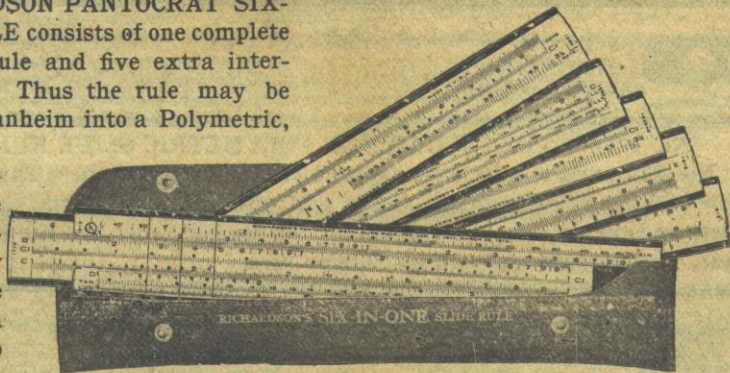


No. 1776. - THE RICHARDSON POLYMETRIC SLIDE RULE has all the scales of No. 812, also a cube scale and a CI or C Inverted scale. This rule will handle three factors at one setting, and it will also give cube roots, square and two-third roots and the corresponding powers. Our largest seller and the best general purpose rule. Price, with case and instruction book ----- \$4.00



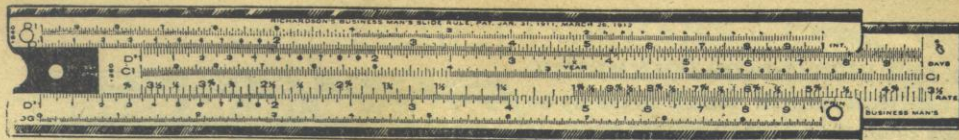
No. 1860 L-L—THE RICHARDSON LOG-LOG SLIDE RULE will solve the simplest as well as the most difficult formulas which are found in Mechanical, Electrical and Civil Engineering practice. Problems involving fractional powers and roots, natural and hyperbolic logarithms and unknown exponents can be easily solved with this rule. Price, with case and instruction book ----- \$4.00

THE RICHARDSON PANTOCRAT SIX-IN-ONE SLIDE RULE consists of one complete Richardson Slide Rule and five extra interchangeable slides. Thus the rule may be changed from a Mannheim into a Polymetric, Business Man's, Binary, Add and Subtract or Log-Log rule as desired. Several rules of other makes would have to be purchased at a cost of from \$25 to \$40 to get the equivalent of the Pantocrat. You save from \$15 to \$25 by making this purchase.



Each rule with the extra slides come in a genuine leather pocket case, and the complete outfit is about the size of an ordinary 10-inch slide rule and case.

If you want to know all there is to know about slide rules, send for this Six-In-One Rule. Price, with 100 page instruction book and leather case -----\$10.00

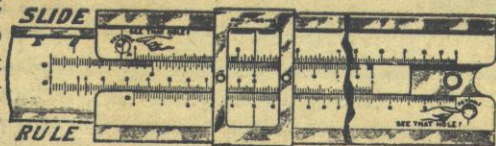


No. 1860—THE RICHARDSON BUSINESS MAN'S SLIDE RULE will give the amount of interest due on any principal, at any rate, for any length of time. It is especially designed for computing commercial problems, cost, estimation and distribution, division of freight rates, wages by the month, day or week for any number of days or hours at any rate per hour, unit cost and selling price, string discounts off of the list price, percentages, proportion, rule of three, etc. A 20 page book especially written and illustrated with 24 cuts shows just how to use this rule for solving commercial problems. Price, with instruction book and case..... \$5.00

Leather Case for the Six-In-One or any other 10-inch slide rule \$1.00

THE SLIDE RULE SIMPLIFIED. New Edition. Written by Prof. J. J. Clark M. E. of Lehigh University and Geo. W. Richardson, Ex-Chief Electrician U. S. Navy. This book has 100 pages and 135 illustrations and diagrams showing just how to set a slide rule for solving any problem. Nothing so complete has heretofore been published. Price \$1.00

No. 1901 RICHARDSON POLYMETRIC FIVE-INCH SLIDE RULE takes up no more room than a small pocket comb. It has a CI Scale and the Direct Reading feature. Price with a full leather case and 100 page instruction book, \$3.00



No. 1865-0 .THE RICHARDSON BINARY SLIDE RULE has a CI scale for handling three factors, also an inverted scale not divided decimally but in halves quarters, eighths, sixteenths, etc., with but one index, near the center of the scale, for multiplying and dividing mixed numbers, as — $3\frac{7}{8} \times 2\frac{1}{2} = 9\frac{11}{16}$.

Price, with case and instruction book

\$4.00

THE GOLDEN COMPASS.

The Golden Compass is a combination compass, protractor, rule, and T-square. Due to its construction it can also be used as a triangle or dividers. This instrument is accurately made of heavy aluminum. It is 9 inches long and $5\frac{1}{4}$ inches wide.

The adjustable slide permits the drawing of circles up to 12 inches in diameter. The scales are graduated in 64ths, 32nds and 10ths of inches, and the protractor reads to one-half degree.

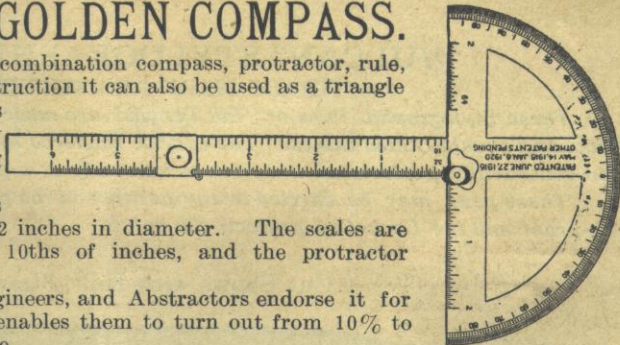
Architects, Draftsmen, Engineers, and Abstractors endorse it for its speed and accuracy which enables them to turn out from 10% to 50% more work in a given time.

Students find that it makes drawing more fascinating and enables them to progress more rapidly. Teachers say that it lightens their work and awakens a keener interest in their classes in Geometry, Trigonometry, and Mechanical Drawing.

Each instrument comes in a heavy pebbled cardboard case. The 32-page instruction book explains and illustrates methods of using this instrument to draw a large variety of designs, ranging from simple circles and polygons to gear teeth drawn in perspective.

Price of the Golden Compass, complete as described, \$3.00.

Your money back if you are not satisfied.



"VULCAN" STYLOGRAPHIC PENS.

TRADE MARK REGISTERED.

These Stylographic Pens or "Ink Pencils" are made by one of the largest makers of fountain pens in United States. The service rendered by the Vulcan Ink Pencil has been consistently perfect and it writes as smoothly as a pencil.

These pens may be carried in any position in the pocket or handbag as they are leak-proof and the Lock-Cap protects the point.

Cut Shows One-Half Size.



The "VULCAN" PEN, Black Rubber Cap and Barrel. Length, five and one-half inches. The barrel holds ink sufficient to write about 10,000 words. Packed in a Paste-board Box with filler, cleaner and instructions, PRICE EACH, \$1.25

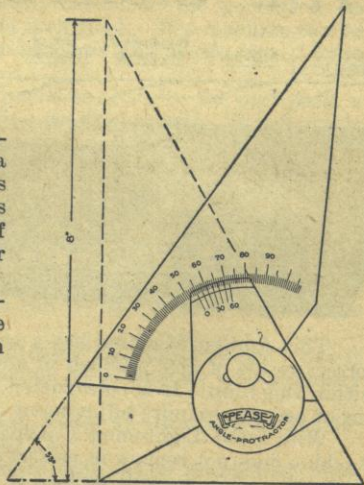
THE PEASE ANGLE-PROTRACTOR.

This instrument is a combination triangle and protractor. It is a time-saver and eliminates the use of a number of tools in dividing circles, transferring angles and in many other operations. The illustration shows the construction of this instrument, and its scope of usefulness will be readily apparent to the Draftsman or Engineer.

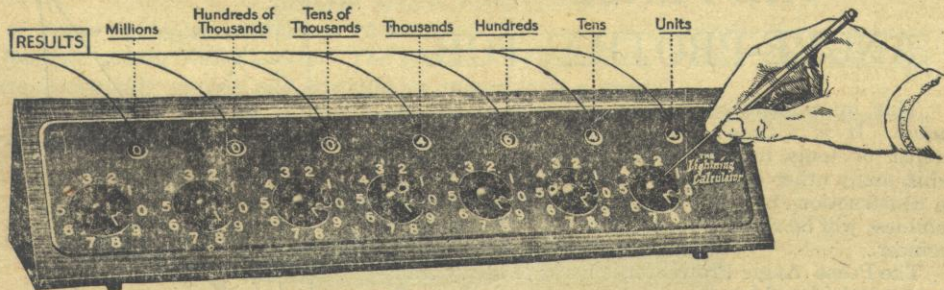
The Pease Angle-Protractor is made of heavy transparent celluloid and has an adjusting screw to clamp the parts in position. The protractor has a vernier which gives readings to one-tenth of a degree.

**Price of the Pease Angle-Protractor,
as described, \$2.50.**

Your money back if you are not satisfied.



THE LIGHTENING CALCULATOR.



This Adding Machine has a capacity of 9,999,999 or \$99,999.99, and it will give the correct result of any problem in addition, subtraction, multiplication, and division that is within this limit. It is constructed of brass and steel throughout. There is nothing to get out of order or require adjustment, and it will last a lifetime.

With each Lightning Calculator we send a written Five-year Guarantee. If the machine does not remain in perfect running order, or if it proves to be defective in material or workmanship we will replace it with a new machine, without charge, any time within five years from date of purchase.

The illustration shows the Lightning Calculator mounted in its base, which is made of black walnut, with rubber cushions. Its size is 14 inches long by 5 inches wide by 4 inches high. The machine can be removed from its base and easily carried in the pocket, as its size without base is 12 inches long by 3 inches wide by $\frac{3}{8}$ inch thick. The machine can be purchased without the base, if desired, and the base purchased at any future time. Price of the base is \$2.25.

Each Lightning Calculator is accompanied with a nickel-steel stylus for operating, a complete book of instructions and suggestions and the Five-year Guarantee. It is securely packed in a pebble-board carton that will stand "pocket wear" and hard usage almost indefinitely.

This machine carries automatically without any attention from the operator. Thus, if the machine shows \$999.99 and 1¢ is added to this amount the machine will show \$1,000.00 after the 1¢ is registered in the first dial. The sum always appears in the row of holes as illustrated.

Subtraction and division can be performed as easily as addition and multiplication. In case of error in operating the machine the correction can be easily made by a simple turn backward of the proper dial.

If you have use for an adding machine, order a Lightning Calculator today. Use it for ten days, and if you are not satisfied return the machine to us and we will promptly refund the full purchase price plus the return postage.

Price of the Lightning Calculator, with wooden base, as illustrated, \$13.50.

Price of Lightning Calculator, without base, \$11.50.

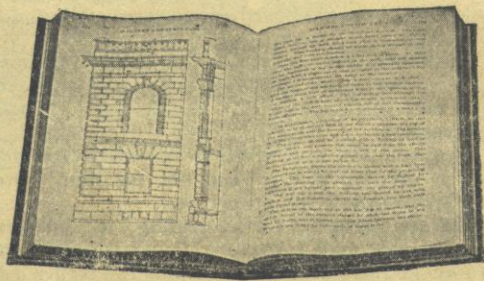
More than 50,000 Calculators have been sold, and more than 5,000 unsolicited testimonials have been received from satisfied users of the Lightning Calculator.

The 24 Little Giant Handbooks.

These Handbooks were written by recognized authorities. Complete in every detail, built like a de luxe edition, these volumes are accepted as authoritative by engineers, businessmen, corporation executives, and scientists. Each book is fully illustrated and accurately indexed.

More than 2,000,000 of these Handbooks have been sold and the present editions are up-to-date in every respect. They are bound in cloth, with gold titles and red edges, and contain an average of 370 pages and 150 illustrations to each volume. Size $3\frac{1}{2}$ inches by $5\frac{1}{8}$ inches and $\frac{7}{8}$ inch thick.

The uniform price is \$1.00 per volume, postage paid.



Order as many of these Handbooks as you need. They will help you to remember, will be of invaluable assistance to you in your work, and will be a constant source of reliable, usable information. If you should be dissatisfied with any of these books we will refund the purchase price for any of them returned to us.

Mechanics Handbook. More than 500,000 volumes of this book have been sold. Invaluable to engineers, draftsmen, mechanics, students, etc. It contains 112 pages of tables; also gives formulas and data on many subjects, including Mensuration, Mechanics, Strength of Materials, Engines and Boilers, Hydromechanics, Electricity, and Machine Design. Contains 375 pages and 175 illustrations.

Electrical Engineer's Handbook. This book should be owned by electrical workers, managers, inventors, draftsmen, and students. The tremendous sale of this Handbook is ample proof of the practical character of its text. The contents are thoroughly up-to-date and in accord with the latest requirements. Contains 100 pages of tables, and the balance of the 425 pages is filled with data on electrical instruments and machines. It also contains 240 diagrams, charts, and illustrations.

Salesman's Handbook. This practical treatise on the principles and practices of salesmanship will prove valuable to anyone interested in selling. 370 pages with many illustrations.

Window Trimmer's Handbook. Contains 315 pages and 300 illustrations.

Farm and Garden Handbook. This is a valuable reference book for farmers, fruit growers, truck and market gardeners, livestock raisers, dairymen, students, and instructors. Contains 435 pages.

Cotton Textile Worker's Handbook. 375 pages and 200 illustrations.

Radio Handbook. This book is for those who are interested in radio receiving and sending instruments.

Building Trades Handbook. Persons connected in any way with the building trades, and every householder, will find this a useful and valuable work. Gives exhaustive data on Architectural and Structural Designing, Masonry, Carpentry, Roofing, Plumbing, Heating, Estimating, and the Steel Square. 420 pages, 265 illustrations.

Advertiser's Handbook. In publishing this volume the needs of the present-day business man were kept in view. It is a safe guide to any that may have merchandise or service to sell. 425 pages and 150 illustrations.

Stenographer's and Correspondent's Handbook. This book should be owned by stenographers, correspondents, and all others who are interested in work of this kind. The contents will be valuable to anyone in touch with present-day commercial life.

Bookkeeper's Handbook. This Handbook is worthy of a place on the desk of every bookkeeper, banker, business man, and office worker. It is the result of years of experience in compiling such information. 325 pages and 135 illustrations.

Business Man's Handbook. Business men, clerks, office, and bank workers should have this book. In it are stated the principles that every man must know to conduct his affairs intelligently and safely. More than 250,000 copies are sold. Contains 325 pages and 60 illustrations.

Concrete Engineer's Handbook. This book should be owned by architects, engineers, contractors, farmers, and by all others interested in concrete. 375 pages and 240 illustrations.

Coal Miner's Handbook. This is a most useful book for miners, foremen, students, superintendents, and others interested in coal mining. Contains 410 pages with 175 illustrations.

Poultryman's Handbook. This book contains 360 pages and 115 illustrations.

Civil Engineer's Handbook. This book contains in simple, concise form the principles, formulas, and methods of the different branches of this profession. Contains 425 pages and 156 illustrations.

Chemist's Handbook. A valuable treatise for chemists, chemical engineers, instructors, and students. Contains 350 pages and 12 illustrations.

Westinghouse Air-Brake Handbook. 275 pages and 136 illustrations.

Traffic Man's Handbook. A fund on knowledge indispensable to traffic work is contained in the 395 pages of this book.

Steam Engineer's Handbook. This book should be in the possession of every steam engineer, fireman, boiler inspector, and student. Contains 310 pages and 54 illustrations and diagrams.

Telephone and Telegraph Engineer's Handbook. Contains 416 pages and 180 illustrations.

Mariner's Handbook. This is an up-to-date reference volume for officers, navigators, yatchmen, students, and seamen. Contains 425 pages, 9 color plates, and 140 illustrations.

Plumber's and Steamfitter's Handbook. This book is for plumbers, gas and steamfitters, salesmen; sanitary, ventilation, heating and civil engineers. It is the only book of its kind ever published. Contains 390 pages and 150 illustrations.

Automobile Handbook. Without doubt this is the most complete book of its kind on the market. It is invaluable to the automobile owner, driver, repairman, or salesman. Contains exhaustive data on Automobile Engines, Carburetors, Ignition, Starters, Transmission, etc. Contains 325 pages and 160 illustrations.

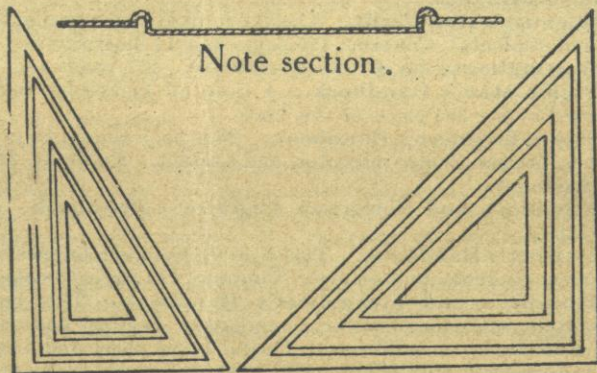
Steel & Celluloid Triangles.

All Edges Ground Smooth and True. Note Section Showing Form. The advantages are many: first, edge being slightly raised from the drawing, prevents ink from running under and smearing drawing; second: easy to pick up; third: small surface in contact with drawing; fourth: accurate; fifth: moderate price.

Made in 8-in. 45 deg. and 10-in. 30 deg. by 60 deg.

METAL TRIANGLES

Price-Each, enameled	\$.30
Nickel plated	.60
Per pair, enameled	.50
Nickel plated	1.00

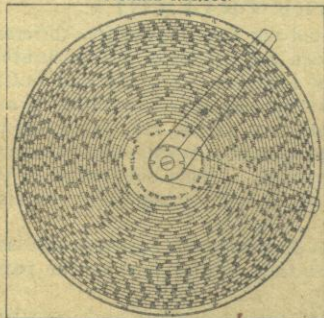


Your money back if you are not satisfied.

CELLULOID TRIANGLES \$.65 Each, \$1.25 Per Pair.

THE ATLAS SLIDE RULE.

The Atlas Slide Rule
(Precision 1:30,000)



Will solve any problem in multiplication, division and proportion as quickly as the ordinary ten-inch straight slide rule and it will give the result with a maximum probable error of 1 in 30,000. This instrument has two Logarithmic Scales, one 30 inches long and the other, a spiral, 75 feet long. Two results to every problem can be read. The result given by the short scale can be read to three figures and the result on the 56 foot scale can be read to five figures as 98,687.

The "Atlas Slide Rule" will handle three factors at one setting and hold the result, two additional factors can be used with this result at each additional setting. The graduations on this rule are always in plain view of the operator so that any number can be

quickly read. The rule is made of aluminum 1-16th of an inch thick, covered with white celluloid enamel. The graduations are engine divided and will remain accurate.

Size 10 x 10 inches. Price, with complete instructions, \$6.00

The Multiple Drafting Instrument.

(PATENTED JANURARY 14, 1919.)

A COMBINATION PLANIMETER, PROTRACTOR, CURVE RADIATOR, 45 AND 30-60 DEGREE TRIANGLE.

The Multiple Drafting Instrument combines in one tool the functions of five different instruments which are used by Engineers, Architects, Draftsmen and Students. It is accurately made of transparent celluloid (Xylonite) and makes a valuable addition to any drafting outfit.

As a Planimeter, the Multiple Drafting Instrument will give the area, in square inches, of any plain figure as an indicator diagram, pattern, cross-section, plan, map, profile, etc. With this instrument, the area of any irregular figure can be measured in one operation. It will reduce the most complex problem in Mensuration to a simple mechanical operation. This one feature of the Multiple Drafting Instrument is worth many times its cost as it will satisfy every requirement met in practice.

The Protractor is graduated from 0 to 180 degrees in both directions and to insure ease and accuracy in using the instrument the graduations are placed so they will be next to the paper when the instrument is in use.

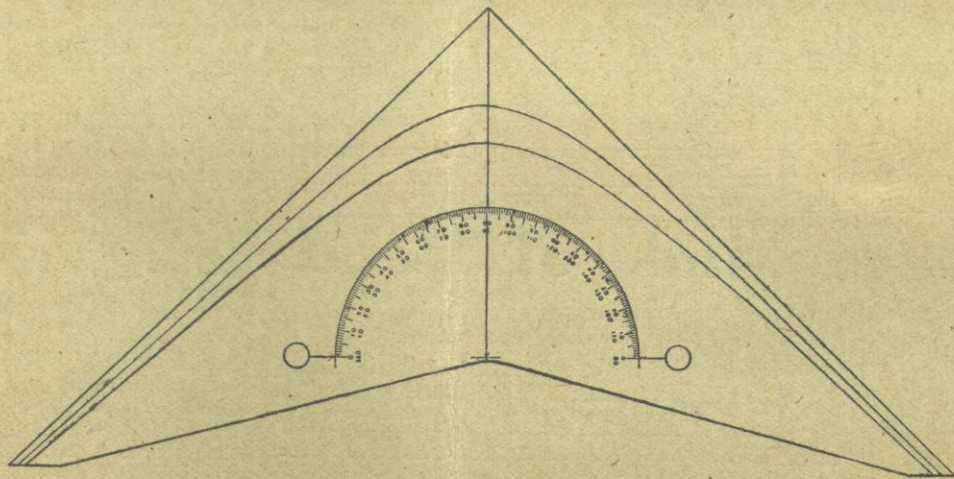
As a Curve Radiator, this instrument can be used to erect perpendiculars and construct tangents from either the convex or concave side of the curve.

The Multiple Drafting Instrument can be used as a substitute for an ordinary 45 degree and 30-60 degree triangle and when used as a Protractor any other angle can be constructed.

This instrument equals an ordinary Eight Inch 45 degree triangle in size.

Price, with complete Instructions,\$1.00

THE MULTIPLE DRAFTING INSTRUMENT.



12-Inch Architect's Triangular Scale.

Divided: 3 32, 3-16, 1-8, 1-4, 3-8, 2-4, 1-2, 1 1-2, 3 in. to the foot, 1-16 in.

WHITE FACE, BLACK LINES

GUARANTEED ACCURATE--OPEN DIVIDED



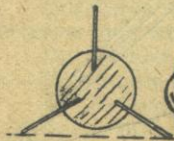
FLAT SCALES, BOTH SIDES DIVIDED LIKE THIS CUT.

Can be Rolled Backward slightly, the edge away from drawing.

Prevents ink from pen flowing under edge.

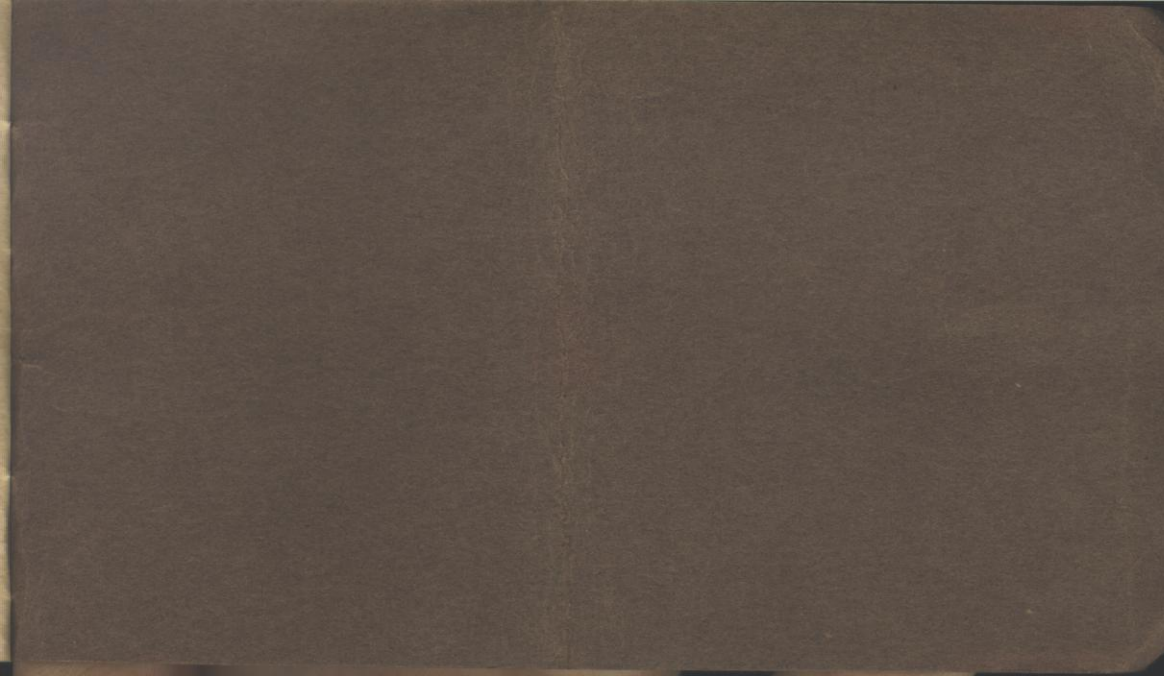
Made of Metal

(Permanently Accurate)



Price, Each 60 Cents.

EITHER STYLE.





BE WISE.