

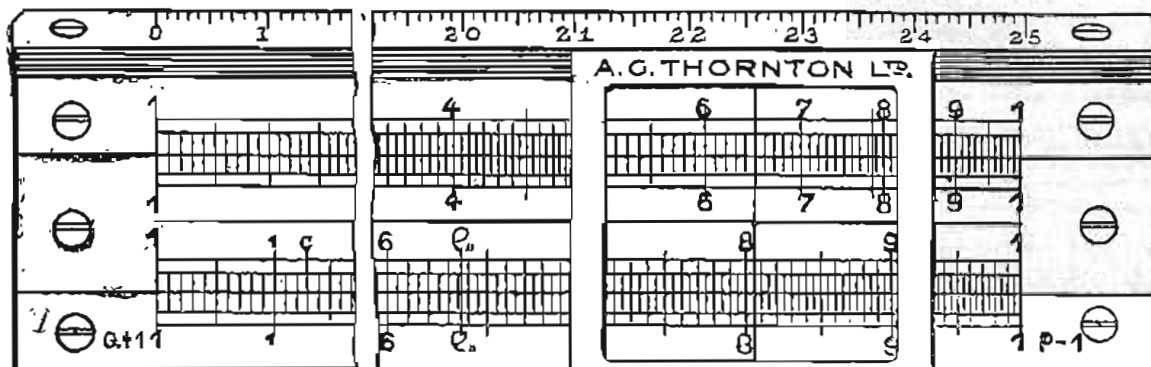
DRAWING
SURVEYING &
SCIENTIFIC
INSTRUMENTS
CAND
DRAWING OFFICE
MATERIALS.

A. G Thornton Ltd.,
Manchester.

SLIDE RULES.

THORNTON'S

Improved Standard Pattern Slide Rules.



D6039.

The under-mentioned Slide Rules, described by us as the **Standard Pattern**, are those in general use by Engineers, and in Technical Colleges. The multiplication, division, square and square root scales known as A, B, C, D are on the face of the rule, the sine, tangent, and logarithm scales on the back of the slide.

In almost every instance where these rules have been impartially tested against other makes, they have been selected.

D6039	Thornton's Improved Slide Rule, 10in. scale, celluloid faced, engine divided, aluminium glass cursor (D8497, page 372) complete in case	... ..	£0 10 0
D4678	Ditto "special quality," for Colleges, etc.	... ..	0 9 0
D6039 $\frac{1}{2}$	Ditto as D6039, 8in. scale	... ..	0 9 6
D6039 $\frac{3}{4}$	Ditto as D6039, with broken line cursor (see D8498 $\frac{1}{2}$ page 372)	... ..	0 11 9
*D6039 $\frac{1}{2}$	Ditto ditto but with bevelled edge divided into ins. and 50ths and fitted with pointed cursor (D8497 $\frac{1}{2}$ page 372)	... ..	0 12 3

*With the additions on this Rule, Engine Indicator diagrams can be rapidly calculated.

For these Slide Rules, with 5in. scales, see page 366.

EXTRA LARGE RULES (15in. and upwards).

D6040 $\frac{1}{2}$	Thornton's Improved Slide Rule, extra quality, 15in. scale, celluloid faced, engine divided, fitted with glass cursor (D8497, page 372), complete in case	... ..	1 10 0
D6040	Ditto 20in. scale (50 c/ms)	... ..	2 0 0
D4678 $\frac{1}{2}$	Ditto ditto "special quality"	... ..	1 17 6
D8616	Ditto 24in. scale, quality as D6040	... ..	3 5 0
D8617	Ditto 40in. scale (100 c/ms), complete in wood case	... ..	7 15 0

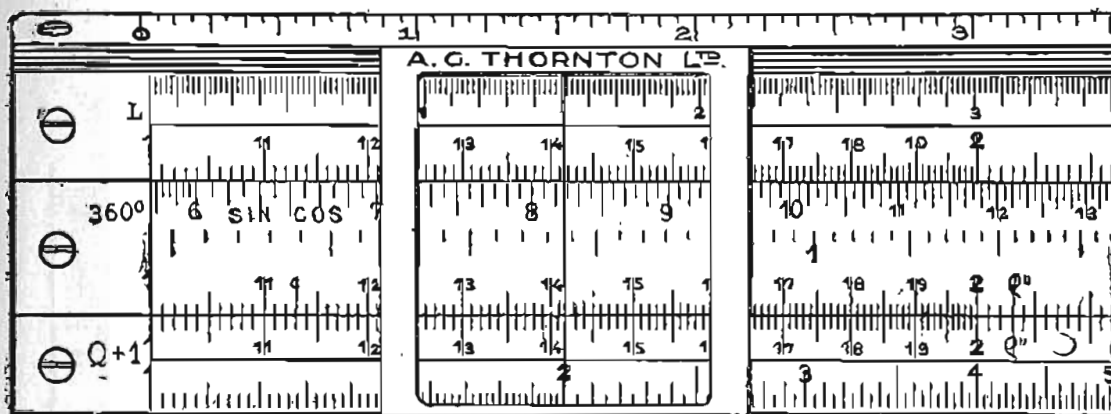
For extra quality Slide Rule Cases see page 368,

“Perry” Slide Rule—Continued.

D6956	Thornton's Improved “Perry” Slide Rule, celluloid faced, 10 inch scale, 1½ inches wide, fitted with glass cursor (as illustrated), complete in case	£0 15 6
D6957	Ditto with scale, inches and fiftieths on bevel edge, and cursor, with pointer attachment, and divided line (see Fig. 8498, page 372).	0 16 9
D6068½	Cardboard Strips, 10½ × 1¼ in., with special data and useful information compiled by Professor Perry, for Mechanical and Electrical Engineers, printed on both sides	3d. each
D6069½	Ditto for Civil Engineers, Physicists, Chemists, etc.	3d. each

For Extra Quality Slide Rule Cases, see page 368.

THORNTON'S “Universal” Pattern Slide Rule.

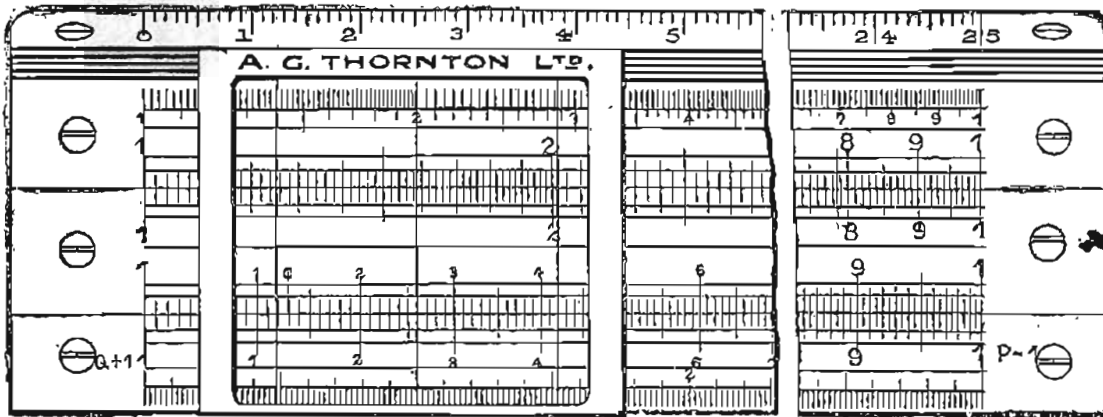


In addition to Multiplication, Division, Evolution, and Involution, the finding of Logarithms, and Trigonometrical functions, The “Universal” Slide Rule provides also for the carrying out of tacheometrical calculations, and for the direct determinations of cubes and cube roots. This rule will therefore be of particular interest to the Surveyor and Engineer who are interested in topographical work.

D4983	Thornton's “Universal” Pattern Slide Rule, 10in. scale, celluloid faced, engine divided, aluminium glass cursor, complete in case	£0 17 6
D8495	Ditto ditto ditto 20in. scale (50 c/ms)	3 5 0

Book of Instructions, 6d, extra.

THORNTON'S "Rietz" Pattern Slide Rule.

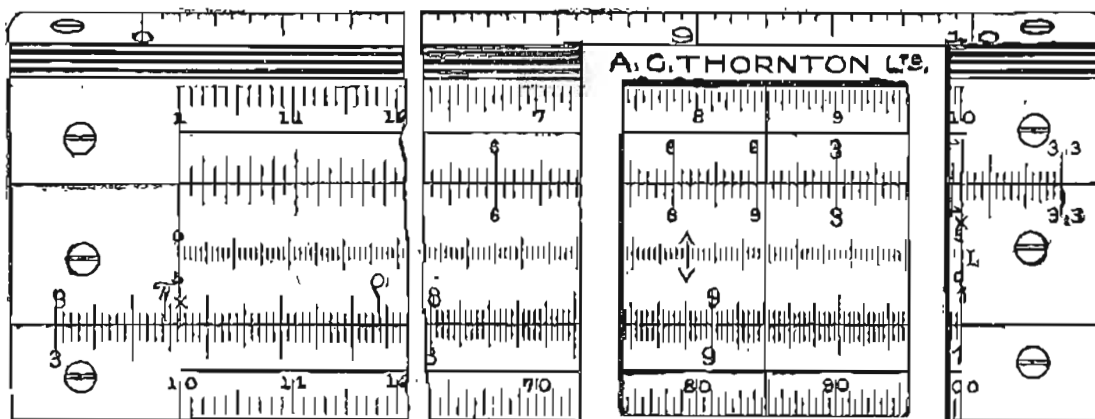


The middle four scales of the Rietz are identical to the A.B.C.D. scales on the standard pattern rules (see page 361). The top scale (F) is used in conjunction with scale (D) and by setting the cursor to a given number on the latter scale the cube power is read on (F); at the same setting a reading taken from the cursor line on (E) the bottom scale, gives the logarithm of the setting on scale (D).

D8494	Thornton's "Rietz" Pattern Slide Rule, 5in., celluloid faced	engine divided, aluminium glass cursor, complete in case	...	£0 10 6
D4908	Ditto	ditto	ditto	10in. scale 0 12 6
D4909	Ditto	ditto	ditto	15in. " 1 17 0
D4910	Ditto	ditto	ditto	20in. " 2 7 6
D8618	Ditto	ditto	ditto	24in. " 3 12 6
D8619	Ditto	ditto	40in. scale, in wood case	8 5 0

Book of Instructions for "Rietz" Rule, 6d. extra.

THORNTON'S "PRECISION" PATTERN SLIDE RULE.

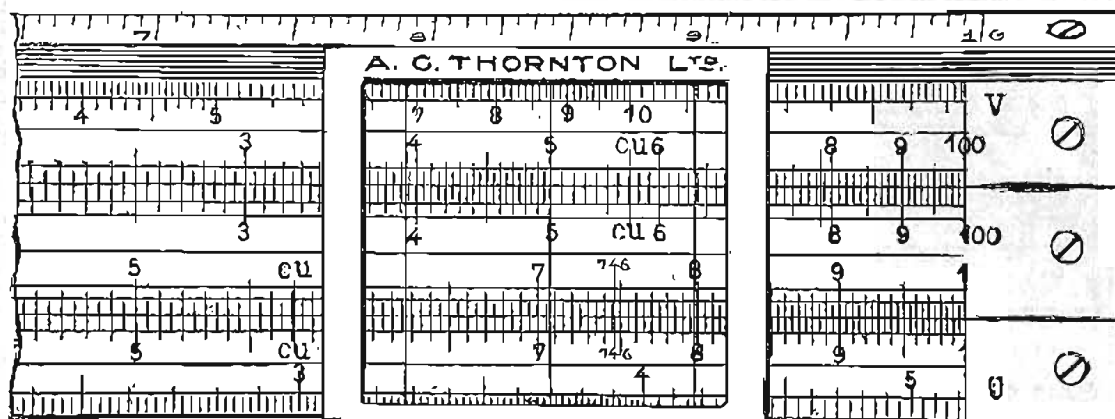


Where greater accuracy of workings are desired than can be obtained with the usual standard rules The "Precision" Slide Rule may with advantage be used. The increased accuracy is made possible by adding to the scale length of the Logarithmic unit, the scale is however not made in one, but in two lengths, thus not interfering with the portability of the rule.

D4980	Thornton's "Precision" Pattern Slide Rule, 10in. scale, celluloid faced, engine divided, aluminium glass cursor, complete in case	...	...	...	...	£1 1 0
D4981	Ditto	ditto	ditto	20in. scale (50 c/ms).		3 12 6

Book of Instructions, 6d. extra,

THORNTON'S "Electro" Pattern Slide Rule.

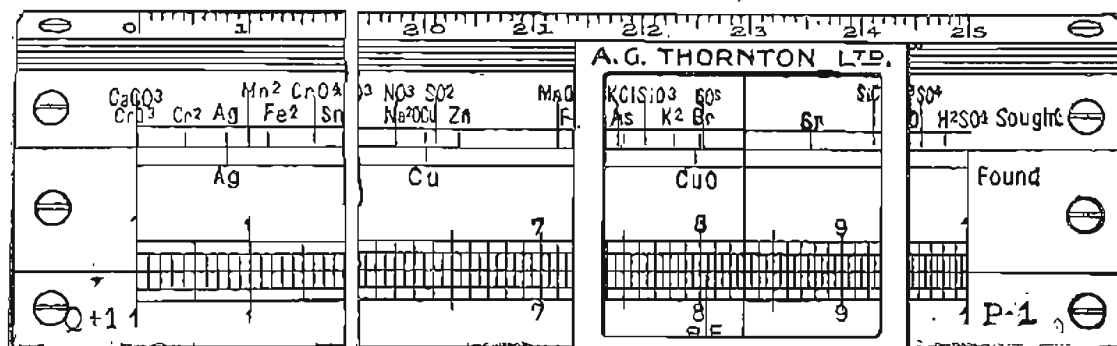


This rule is designed for the purpose of facilitating the Calculations of Electrical Engineers. Scale "V" the upper scale, enables calculations of resistances and losses of potential in electrical conductors to be made in a simple and convenient manner. Scale "U" enables calculations relating to circumferential velocity to be made with one setting of the slide. The illustration shows a new form of Cursor having three lines in place of one, enabling the Cursor to be used with greater facility at either end of the rule.

D8496 Thornton's "Electro" Pattern Slide Rule, 10 inch scale, celluloid faced, engine divided, fitted with aluminium glass cursor, complete in case £0 13 6
Book of Instructions, 6d. extra.

THORNTON'S "CHEMISTS" SLIDE RULE.

(This Rule is applicable to all branches of Chemistry).

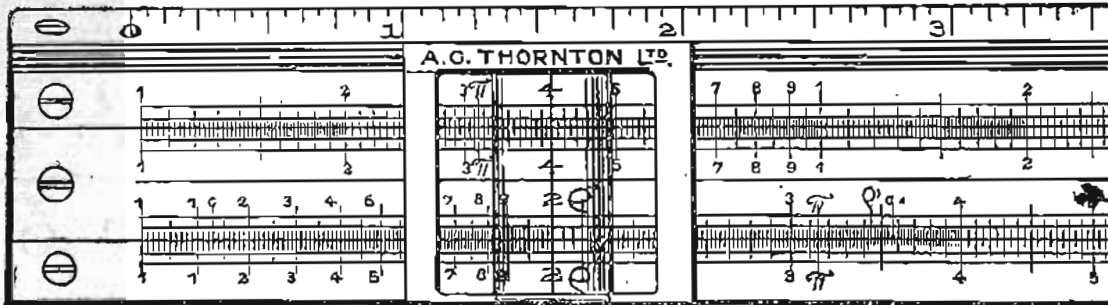


In this Slide Rule, the upper scales (the scales for squares) of the ordinary Slide Rule are replaced by a series of gauge points or marks denoting the atomic and molecular weights of the most important elements and continuations. The determining formulas of the elements and radicals are on the face and the back of the slide, while the elements and combination to be found are marked on the body of the rule. Further particulars can be obtained from Book of Instructions (see below).

D4985 Thorntons' "Chemists" Slide Rule, 10 inch scale, celluloid faced, engine divided, fitted with aluminium glass cursor, complete in case £0 13 6
Book of Instructions, 6d. extra.

Magnifying Cursor Slide Rules.

(A Handy Rule for the Pocket).



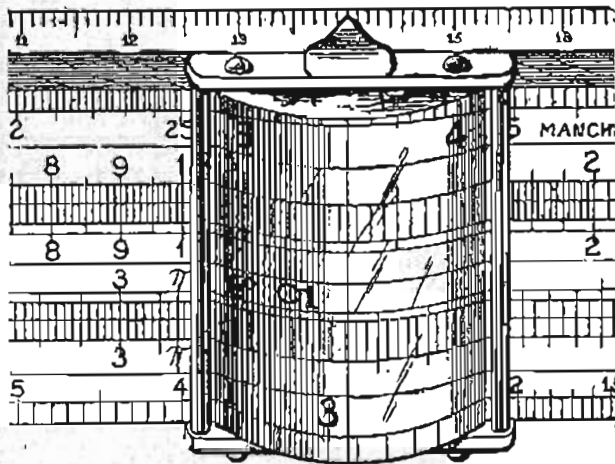
Until the introduction of the magnifying Cursor the 5in. Slide Rule was advocated for use only on account of its portability: it was so useful to carry in the pocket.

With the ordinary Cursor the markings on the 5in. rule were bound to be different to those on the 10in. rule. For a facsimile of the 10in. rule produced in 5in. form, the markings on it could only be read by people possessing the best of sight, the result was that modifications in the markings had to be made in the smaller size rule.

The addition of the new magnifying cursor enables us to give an exact copy of the 10in. rule in 5in. size, thus the markings as read through the cursor can be quite easily seen. We have had a demand for the rule without Magnifier, we therefore quote special price for same.

D4504 $\frac{1}{2}$	Thornton's Improved Slide Rule, 5 inch celluloid faced, as described above, fitted with magnifying cursor, complete in case	...	£0	9	0	
D4986	Ditto with ordinary cursor, without magnifier	...	...	0	8	0
D2847	Ditto ditto as D4504 $\frac{1}{2}$ but not so fully divided, with magnifying cursor, usual pattern	...	...	0	7	3
D8492	Ditto ditto ordinary cursor, without magnifier	...	...	0	5	3

THORNTON'S POWERFUL MAGNIFIER FOR THE SLIDE RULE.

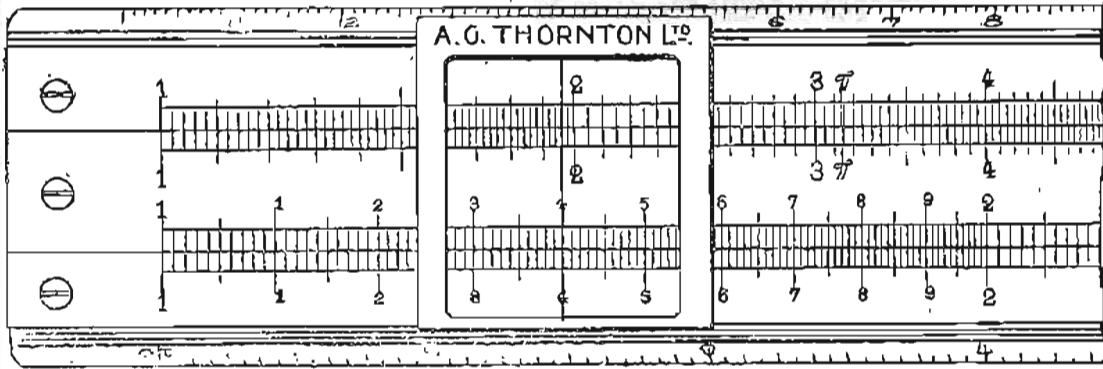


This Magnifier has no superior for use with the Slide Rule. It is quite indispensable to users of the Slide Rule who suffer from short sight. Makes the reading of the rule a pleasure instead of a trial. Is a magnifier of the highest quality.

When D4911—2 are supplied—in place of the usual cursor—with a new rule, a reduction is allowed for the value of the usual cursor (see page 372).

D4911	Thornton's Powerful Magnifier, mounted on electrum cursor	...	£0	12	6	
D4912	Ditto with interrupted line and addition of pointer (as illustrated)	0	15	0

Thornton's "Technical" Slide Rule.



For many years Technical Authorities have been enquiring for a cheap form of accurately divided Slide Rule which will meet the requirements of Engineering Students. The **Technical Slide Rule** has been designed to meet this demand, and will be found to fulfil all requirements.

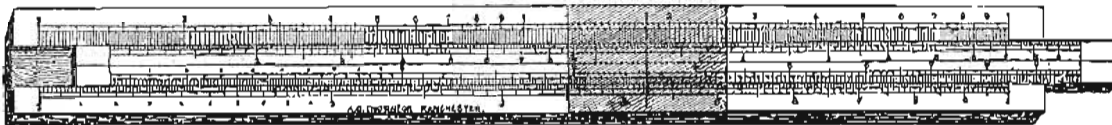
The Rule is very similar in construction to the better quality rules we supply, but it is of slightly cheaper form, this will readily be understood from the price it is sold at.

The usual A. B. C. D. scales are on the face, but the sine, tangent, and the logarithm divisions usually on the back of the slide are omitted, the same being left blank. One bevelled edge is divided into inches and sixteenths, the other edge centimetres.

This Rule now commands a very large sale, for it is the **cheapest and most accurate** on the market at the price.

D4977 Thornton's "Technical" Slide Rule, 10in. scale, celluloid faced,
 engine divided, fitted with aluminium glass cursor, complete in case £0 5 0
 Book of Instructions, 3d. extra.

THE "KENSINGTON" SLIDE RULE.



This rule is designed to meet the demand for a durable slide rule at the lowest possible price. Although the markings of the scales are not so accurate as on the better rules, still they are sufficiently accurate for the work for which they are intended, *i.e.* to teach students the principles and use of the Slide Rule.

The numbers for Sine, Logarithm and Tangent are given in the form a tables on the back of the rule, and the back of the slide is left plain.

D6079 The "Kensington" Slide Rule, made in boxwood, 10in. scale,
 printed and varnished face, with transparent celluloid cursor ... £0 2 0
 D6079½ Case for above extra 0 0 3

Instruction Book for above 3d. extra.

The "Simplified" Slide Rule.

Designed by Alfred T. Best, A.M.I.C.E.

For the use of Architects, Engineers, Quantity Surveyors, Contractors, Timber Merchants, Book-keepers, Estimators, Stonemasons, and all practical men.

Scale A and B are divided duodecimally, *i.e.* into twelfths : C and D are divided decimally, *i.e.* into tenths.

In working to transfer from tenths to twelfths or vice versa can be made from either set of scales by means of the Cursor.

D4712 **Best's Simplified Slide Rule**, 11½ins. long, 1¼in. wide, made of boxwood, having printed and varnished face, complete with electrum mounted celluloid Cursor £0 4 0

Book of Instructions, 32 pages, with 17 illustrations, 6d. extra.

THORNTON'S "CARDBOARD" SLIDE RULE.

This Slide Rule was introduced to meet a demand for an inexpensive rule, suitable for Evening Students and Day Schools. It will be found to be quite accurate and reliable.

D4853½ **Thornton's Cardboard Slide Rule**, 10in. scale, 1¼in. wide, complete with metal cursor, in limp case £0 2 3

D4853 **Ditto** but 5½ins. long, with celluloid cursor, complete in case 0 1 0

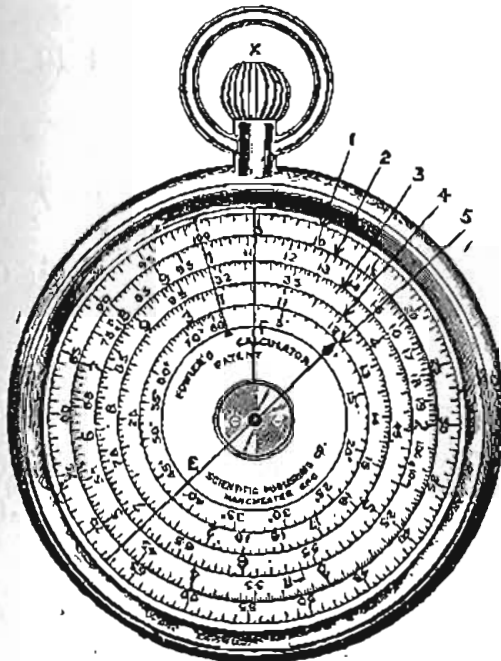
Stiff Case for D4853½ 3d. extra.

SLIDE RULE CASES.

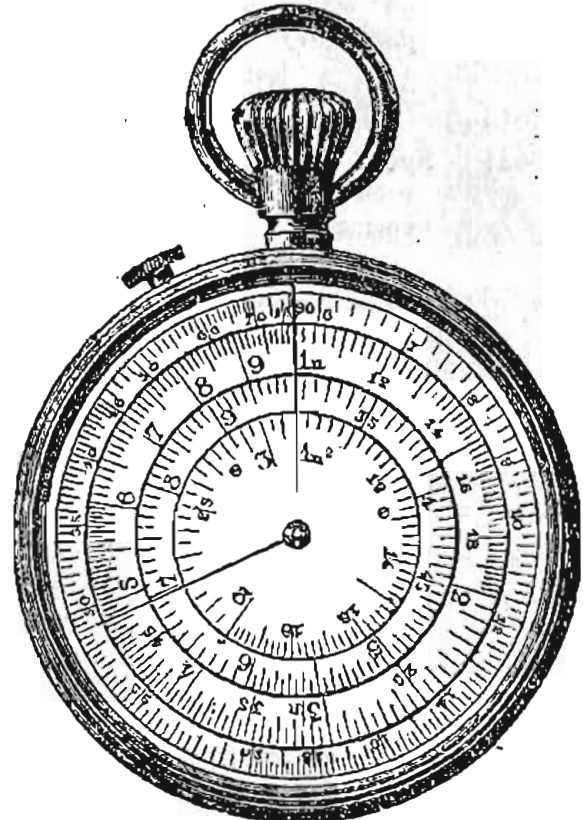
		For Rules with ordinary Cursor.	For Rules with magnifying Cursor.
D6040a	Cloth covered Case, ex. quality, for 10in. rule	1/0	1/6
D8600	Solid Cowhide Case, for 5in. rule	... 2/0	3/0
D6040b	Ditto for 10in. rule	... 2/6	3/6
D8601	Ditto for 15in. rule	... 3/6	4/6
D8602	Ditto for 20in. rule	... 5/0	6/6

Pocket Calculators.

(Watch Form).



D6927



D6927½

- D6927 "Mechanical Engineer" Pocket Calculator (patent) with two dials. Solves multiplication, divisions, fractions, squares and square roots, cubes and cube roots, miscellaneous roots and powers, logarithms, areas of circles, sines, cosines, and tangent of angles ... nett £0 7 6
- D6927½ "Boucher's" Pocket Calculator, in nickel case, with cardboard dials, one fixed and one moveable. The front dial gives numbers, sines, and square roots; the back dial, scale of equal parts, cubes and cube roots. Complete with instructions 0 12 6
- D6927¾ Ditto ditto with metal dials 0 15 0
- D8622 "Fowler's" Patent Textile Calculator, with uniform list of prices, two dials. Complete with book of instructions ... nett 0 7 6

Post on any of the above, 3d. extra.

The above calculators are about the size of an ordinary watch,

Calculating Slide Rules—Various.

D8614	Demonstration Slide Rule, about 8 feet long, with painted divisions on white ground, fitted with cursor. Standard pattern (see page 361)	£3 12 6
	Suitable for Class use in Universities, Colleges, etc.	
D8615	Ditto "Rietz" pattern, (see page 364)	4 7 6
D8621	Speed and Power Computer, designed by Morton & Goudie, as used by the principal consulting naval architects and marine engineers	nett 1 10 0
	Descriptive list for D8621 sent free on application.	
D6038	McPherson's Patent Calculating Rule, made of boxwood, 8 inch long, engine divided, for regulating the flow of water over gauge weirs, etc.	0 7 6
D4994	Power Computer for Steam, Gas and Oil Engines, by Chas. N. Pickworth, Wh.Sc.	0 5 0
D2803	Hudson's Horse Power Computing Scale, cardboard, in case with instructions	0 5 3
D2803½	Ditto opaque celluloid ditto	0 13 3
D4812¼	Professor Fuller's Cylindrical Calculating Slide Rule, equal to a slide rule 83 feet long. In mahogany case with instructions ...	3 3 6
D2800	Ditto with addition of scale of Sines	3 19 0
D2801	Fuller-Bakewell, as D4812¼ with additional scales, giving at sight the horizontal equivalent and vertical height from tacheometer observations. In mahogany case, with instructions	4 15 0
	Descriptive Booklet of D4812¼ 6d.	
D2802	Thacker's Slide Rule, American make, consisting of two logarithmic scales, one on the internal cylinder and the other mounted on the external bridges. Gives results in 4 figures exactly ...	7 18 6
D8603	Hoare's Slide Rule, boxwood, for calculating weights of iron and steel plates and bars, 25ins. long	1 13 6
D6604	Ditto ditto 12ins. long, pocket size	1 10 9
D8605	Paper Maker's Slide Rule, boxwood, for calculating equivalent weights of papers and boards, etc., 25ins.	2 2 0
D8606	Artillery Range Finding Slide Rule, boxwood, 15ins. ...	0 16 9
D8607	Major General Hannington's Universal Calculating Rule for Census work, 30ins.	2 4 6
D8608	Ditto ditto ditto 60ins.	2 15 6
D8609	Ditto ditto ditto 120ins.	4 15 0
D8610	Harrow Mark Reducer, for estimating percentage of marks obtained, stock 24ins., slide 36ins. (useful in schools)	0 13 6
D8611	Scotts Patent Slide Rule, boxwood, for calculating the weights of lead, copper, brass, steel, iron, zinc, aluminium, brick work, green heart, teak, oak, mahogany, ash, pine, elm and cork	1 13 6
	Book of Instructions, 6d. extra.	
D8612	Cotton Cloth Computer, indispensable to all who have to calculate the cost of cotton cloth, with instructions, pocket size ...	0 8 6
D8613	Ditto large size for office use	1 10 0

Faber's Slide Rules.

D4509	Faber's Slide Rule, with decimals, 11ins. long, celluloid surface fitted with ordinary cursor, complete in case	...	...	8/6 each
D4988	Ditto with quotient and product signs	...	...	10/6 ..
D4989	Ditto as D4988, with registering cursor	...	...	10/6 ..
D4990	Ditto without decimals, and fitted with ordinary cursor			10/6 ..
D4509 $\frac{1}{8}$	Ditto as D4990, with registering cursor	...	...	10/6 ..
D4991	Ditto as D4990, with log-log scale and special cursor (For Electrical and Mechanical Engineers).			12/0 ..
D4991 $\frac{1}{4}$	Ditto as D4990, with cube root scale	...	...	12/0 ..
D4991 $\frac{1}{2}$	Ditto as D4991 $\frac{1}{4}$, with registering cursor	...	...	12/0 ..
D4992	Students Rule, 11ins. long, celluloid surface, fitted with ordinary cursor			5/0 ..
D4992 $\frac{1}{2}$	Pocket Rule, 5$\frac{7}{8}$ins. long, as D4990	...	...	5/0 ..

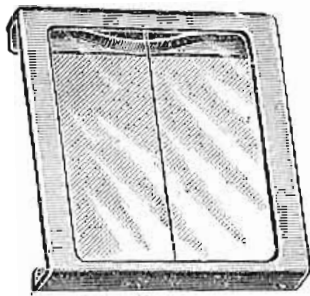
For particulars of Cursors for above Rules see page 372.

Instruction Books for Faber's Slide Rule 1/6 extra.

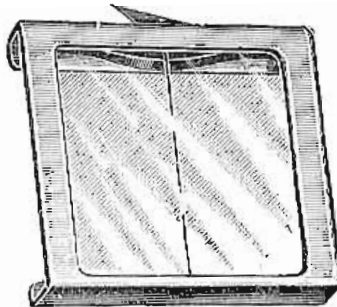
SLIDE RULE BOOKS.

D5365	The Slide Rule in Theory and Practice, by J. T. Pearce, B.A., revised by S. Chapman, B.A.,	...	price 6d., post free	7d. ..
D5365 $\frac{1}{2}$	Ditto bound stiff cloth	...	1/0 ; post free	1/1 ..
D4589 $\frac{1}{2}$	The Slide Rule by C. N. Pickworth, Wh. Sc., with numerous illustrations and diagrams	...	price 2/0 ; post free	2/2 ..
D4586	"Some Quick and Easy Methods." A simple explanation of the theory and use of the Slide Rule, logarithms, etc., by Robert Gordon Blane, M.E., A.M.I.C.E.	...	price 2/6 ; post free	2/8 ..
D4586 $\frac{1}{4}$	The Slide Rule and Watch Calculator,		price 1/0 ; post free	1/1
D4509 $\frac{7}{8}$	Book of Instructions for Faber's Slide Rule,		price 1/6 ; post free	1/8 ..
D8820	Instanter Decimal Tables, by O. Winzar, giving at sight the decimal equivalent of the monies, weights, measures, angles, fractions, in general use in the British Empire and the United States,		price 1/6 ; post free	1/8 ..

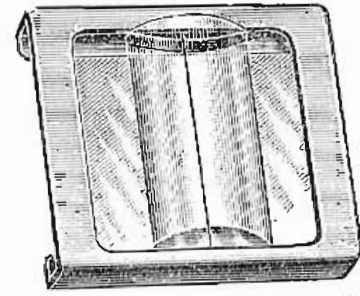
Slide Rule Cursors.



D8497



D8498



D8499

		For Rules size :			
		5in.	8 & 10in.	15in.	20in.
D8497	Glass Cursor, aluminium framed, with continuous line, ordinary size	2/0	2/0	3/0	3/0
D8497a	Ditto for extra wide rules having 6 scales on face	—	3/0	—	4/6
D8498	Ditto ditto with broken line and pointer, for 6957 Perry Rule	—	4/6	—	—
D8498½	Ditto ordinary size, with broken line, no pointer	—	3/6	—	4/6
D8497½	Ditto ditto with continuous line & pointer	—	3/0	—	—
D8499	Magnifying Cursor, aluminium framed, with continuous line, ordinary size	3/3	4/0	—	—
D8499½	Ditto for extra wide rules, having 6 scales, ex. quality	—	8/3	—	—
D2810	Glass Cursor for Faber Rules, ordinary pattern	2/0	2/0	—	—
D2810¼	Ditto registering pattern	—	3/0	—	—
D2810½	Ditto as D2810, for electrical pattern rules	—	2/6	—	—

Note. Errors of Parallax, and the personal error, are greatly obviated by using the broken line cursor in place of cursor with continuous line.

BROKEN CURSORS (Glass or Spring).

It does not pay to repair these singly, so to overcome the difficulty we make a substantial allowance for the broken cursor, if this is returned at the same time a new cursor is ordered. This allowance cannot be fixed, and depends entirely on the condition of the old cursor. Customers must therefore remit the full amount for a new cursor, when the difference representing the best allowance we can make for the broken cursor will be refunded.

This does not apply to Cursors for Faber's Slide Rules, for which no allowance can be made.