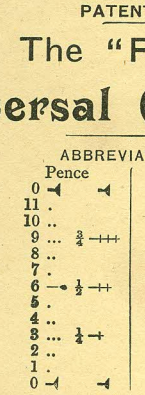
Inglis' "Flash" Reckoners.

Faster than a Calculating Machine.

PATENTED.

The "Flash"

Universal Calculator



This System is specially adapted for GREAT RAPIDITY where broad results are wanted in an instant.

CIRCLES—To find the *circumference* of a circle, move the arrow G to π, on H; the answer appears on E opposite the figure of the diameter on F.

Example: What is the circumference of a 16-inch circle? Move G to π, and opposite 16 is the answer = 50 inches.

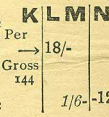
To find the *diameter* of a circle move the arrow G to π (on H), the diameter will then be found on F opposite the circumference (on E).

COSTING—The price of any number of Cwts., Qrs., Lbs., Grosses, Dozens, &c., &c., is found by moving the price per Cwt., Qr., Lb., &c., to the O mark on Scale S: *but* the value of any number of lbs. where goods are sold *per Cwt.* is found by moving Scale L to the per Cwt. mark; of ounces to the per Lb. mark, &c. The answer is then visible on Scale M opposite its respective number, and will be of the designation required, *i.e.* in *oz.* if L is set at the per lb. mark; in *lbs.* if at the per cwt., quarter, or per stone mark, &c.

1/8ths can be calculated by using the per 8 lb. Stone mark, 1/12ths by the per Dozen mark, 16ths by the per Lb. mark, &c., &c.

Example: If goods are sold at 4/6 a yard, move "4/6" on Col. R opposite the Red Circle O; the value of any quantity from 1/8th to 2000 yards will appear on the Scales P Q, R S.

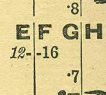
If goods are sold at 18/- per gross, move Scale L so that 18/- is opposite the 'per gross' mark: the cost of any quantity from 1 to 1000 is then visible on Scale M opposite its respective number.



DECIMALS TO FRACTIONS—To find the equivalent fraction, move the Slide G so that the hand at foot of Col. H points to the decimal; then, glancing up the Scales E F, the first coinciding of two figures gives the fraction.

Example: What fraction is ·75? Move G so that ·75 is opposite the hand, then as 3-4 on E F coincide; ¾ is the fraction.

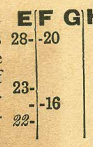
DECIMAL VALUES—Example: It is desired to know what is the value of ·75 of 16 oz.; move the Slide G so that ·75 is opposite the finger point, and opposite 16 (on F) is 12 (on E) = 12 oz. which is the answer.



DIVISION—Move the Slide F so that the smaller number (on F), is opposite the larger number on E. The arrow G points to the answer.

Example: Divide 76 by 19. Move 19 on the slide, opposite 76, and the arrow points to 4. Large numbers are found in a similar manner on Scale C D: the answer appearing opposite 1 on Scale C.

ENLARGEMENT—Example: To find the proportional enlargement of a picture 20 inches long being enlarged to 28 inches. Move the Slide F G so that 20 is opposite 28. If the picture is 16 inches wide it will be enlarged to 22½ inches, this being the proportionate enlargement; 22½ being opposite 16.



EQUIVALENT VALUES—Move the Slide C (or F) so that the usual equivalent values—such as 25 francs = 20/- appear on the Scale C D (or E F): the Scales will then read accurately for all numbers on the same basis.

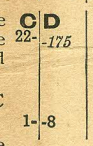
Example: What is the value of 300 francs? Move 20 on C, opposite 25 on D, and opposite 300 is 240 = 240/- or £12 0s. 0d. If 11 Irish miles = 14 English miles, what distance is 7 Irish miles? Move 11 on F, to 14 on E, and opposite 7 is 9 (approx.), the equivalent in English miles.

FRACTIONS EXHIBITED AS DECIMALS. Move the Slide F so that the figures of the Fraction read together on E and F, as 19/24 for 19/24ths, 3/4 as 3/4ths, &c.; the decimal value then appears at the point finger.

Example: What is the decimal equivalent of 27/65ths? Move 65 on F opposite 27 on E (making the reading 27/65), the finger then points to ·41 (approx.) as the answer.

MULTIPLICATION—For large numbers use Scale C D. Move the "1" to one of the numbers, and the answer will be found opposite the other on C.

Example: Multiply 22 × 8. Move "1" on C to 8, and opposite 22 (on C) is over 175 = 176.



For small and fractional numbers move the arrow G to the number to be multiplied (on H), and the answer appears opposite the multiplier on F.

Example: To multiply 5½ × 6. Move G to 5·5 (= 5½) and opposite 6 on F is 33.

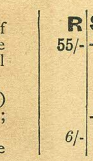
Observe that the multiplication of 2, 20, and 200, by 3, 30, or 300 involves the same figures, but with additional 0's; thus 3·5 (3½) can be used for 35 or 350. *Note:* Always add a 0 to the answer for each 0 in the numbers; thus, using 2 × 2 for 20 × 200, the answer is 4, plus three 0's = 4000.

PERCENT—When the Percentage is a question of money, and under 5%, use Scale R S. Move the rate % (on R) opposite 100, and the amount for all lesser sums at once appears.

Example: If the rate is 2¾% move 55/- (= £2 15s. 0d.) opposite 100, and the amount for 1 (= £1) is 6½d.; 12 (= £12) = 6/7, etc., etc.

Scales C D or E F may also be used in the same manner.

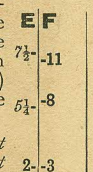
When the Percentage is a matter of quantity see under Proportion.



PROPORTION—Example: If 5 oz. of a powder is dissolved in 16 oz. of water, how much is required for a 6 oz. bottle? Move 5 on Scale F opposite 16 on E, and the answer appears opposite 6 (oz.) on E, viz.: 1⅞ oz.

If 1¾ yards of silk at 4/6 per yard is required, move 4/6 on Scale R opposite "1" on S. The value will then appear opposite 1¾, which is 7/11.

REDUCTION—Example: If it is desired to reduce a picture 11 × 8 proportionately, and the reduction is to ⅔rd of original size. Move Slide F so that it reads 2/3. The reduction of 11 will read (about) 7⅜ and of 8 (about) 5⅜. If the reduction is to ½, make the Scale read 1/3, and then 11 = 3⅝, and 8 = 2⅝.



The points of usefulness of these Tables are not limited to these few leading features, but a short acquaintance will show that almost any calculation likely to be wanted is covered by these Tables.

Engineers and Surveyors will recognise that many highly technical formulæ can be reckoned out on these tables on the same principle as these popular examples.

GALL & INGLIS,
31 Henrietta Street, Strand, London, W.C.,
And 20 Bernard Terrace, Edinburgh.