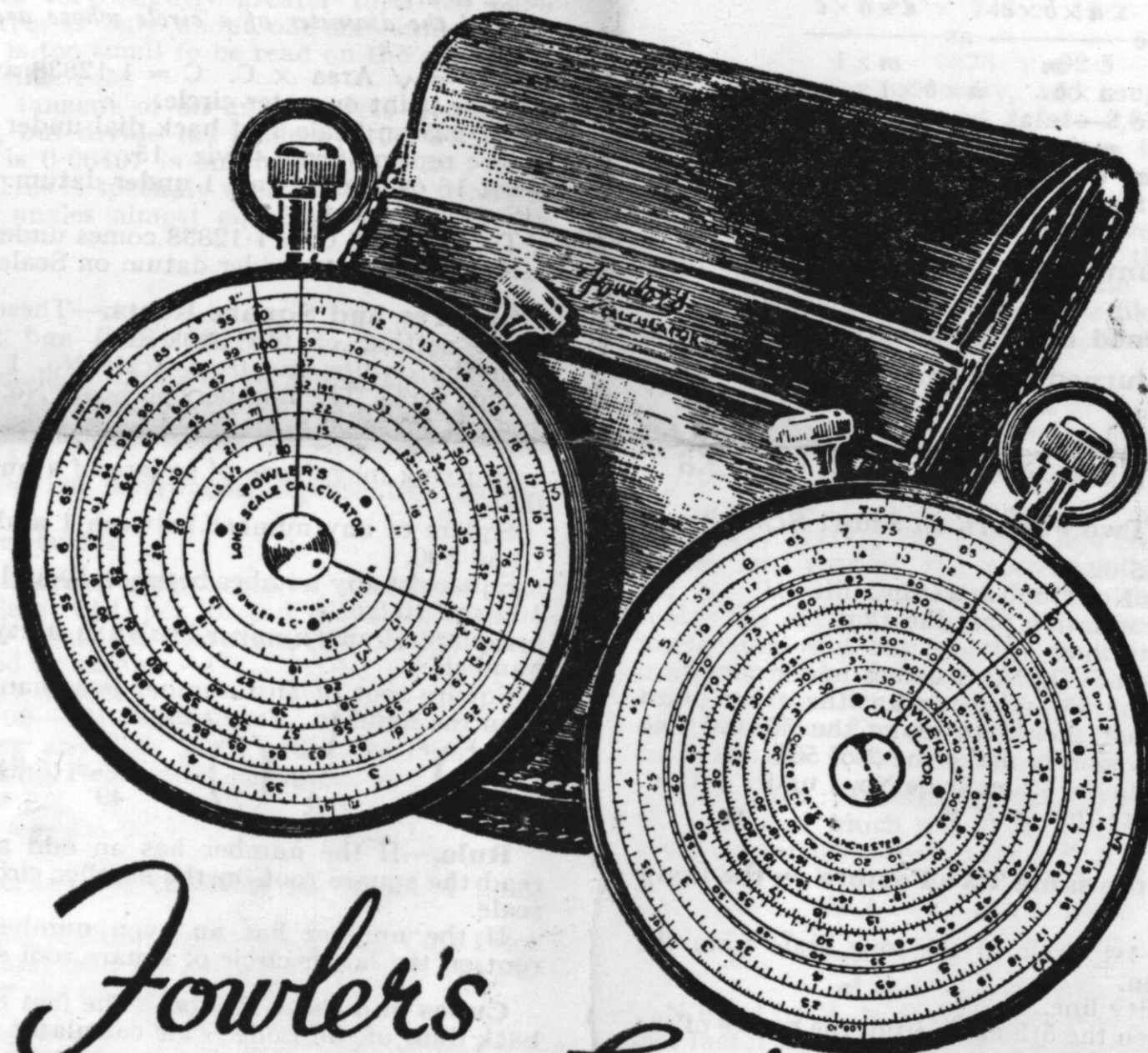


# INSTRUCTIONS FOR THE USE OF



*Fowler's*  
VEST POCKET  
*Calculator*

## DESCRIPTION OF DIALS

**The Front Dial** comprises an outer "Short scale" complete in a single circle 6.7" in circumference, which can be used for Multiplication and Division in the same way as in other types of Fowler's Calculators.

The six inner circles form a similar continuous "Long-scale" 30" in total circumference. It is used just like the single circle or "Short-scale," though the "Short-scale" is sometimes convenient for finding an approximate result to determine the precise circle of the "Long-scale" on which to read the very accurate result.

**The Back Dial** comprises seven scales, reckoning inwards as follows:—

No. 1.—A scale similar to the multiplying and dividing scale of the front dial.

No. 2.—A scale of Reciprocals exactly similar to Scale No. 1, but graduated contra clockwise instead of clockwise.

No. 3.—A scale of Logarithms graduated at intervals of .01.

No. 4.—A scale of Square roots from 0 to 100. (The values of the squares are read on Scale No. 1.) This scale extends continuously twice round the circumference.

No. 5.—A scale of Log. Sine Values from  $5^{\circ} 45'$  to  $90^{\circ}$ .

From  $5^{\circ} 45'$  to  $8^{\circ}$  graduations every  $5'$ .

$8^{\circ}$  to  $12^{\circ}$  graduations every  $10'$ .

$12^{\circ}$  to  $30^{\circ}$  graduations every  $20'$ .

$30^{\circ}$  to  $60^{\circ}$  graduations every  $1^{\circ}$ .

$60^{\circ}$  to  $80^{\circ}$  graduations every  $2^{\circ}$ .

No. 6.—A scale of Log. Tangent Values from  $5^{\circ} 45'$  to  $45^{\circ}$ .

From  $5^{\circ} 45'$  to  $8^{\circ}$  graduations every  $5'$ .

$8^{\circ}$  to  $12^{\circ}$  graduations every  $10'$ .

$12^{\circ}$  to  $30^{\circ}$  graduations every  $20'$ .

$30^{\circ}$  to  $45^{\circ}$  graduations every  $30'$ .

No. 7.—A scale of Log. Sines from  $35'$  to  $5^{\circ} 45'$ .

From  $35'$  to  $1^{\circ}$  graduations every  $1'$ .

$1^{\circ}$  to  $3^{\circ}$  graduations every  $2'$ .

$3^{\circ}$  to  $5^{\circ} 45'$  graduations every  $5'$ .

**Note.**—The values of all the functions given on Scales No. 3 to No. 7 can be read directly on Scale No. 1 by means of the Datum line, or their inverse values by reading on Scale No. 2.

**Gauge Points.**—For facility in setting, both the "Short-scale" and the "Long-scale" of the front dial as well as outer scale of the back dial have certain values specially indicated.

## ARITHMETICAL EXAMPLES

**Multiplication.**—Front dial. Either the "Short-scale" or the "Long-scale" may be used, but for purpose of illustrating the principle, the description will be first confined to the single outer circle or "Short-scale."

Suppose the factors are  $a \times b \times c$ , etc.

Set  $a$  under Datum by top nut **X**.

Set Cursor at 1.0 by side nut **Y**.

Set dial by nut **X** till  $b$  is under Cursor.

Read  $a \times b$  under Datum.

If there is a third factor  $c$ :

Set Cursor again at 1.0 by nut **Y**.

Set dial by nut **X** till  $c$  is under Cursor.

Read  $a \times b \times c$  under Datum, and so on for any number of factors.

In using the "Long-scale" formed by the six inner circles of the front dial, the setting is precisely the same as described above for the "Short-scale," but the factors  $a$ ,  $b$ ,  $c$ , etc., are, of course, read exclusively from the "Long-scale."

**Division : Fractions.**—If division of simple form  $\frac{a}{m}$  use Scale No. 1.

Set  $a$  under Datum by nut **X**.

Set Cursor to  $m$  by nut **Y**.

Set dial by nut **X** till 1.0 is under Cursor.

Read  $\frac{a}{m}$  under Datum.

If division of form  $\frac{a \times b}{m}$  proceed thus:—

Set  $a$  under Datum by nut **X**.

Set Cursor to  $m$  by nut **Y**.

Set dial by nut **X** till  $b$  is under Cursor.

Read answer under Datum.