935,584

PATENT SPECIFICATION

DRAWINGS ATTACHED

935,584

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COMPLETE SPECIFICATION

Improvements in or relating to Slide Rules

We, ARMSTRONG CORK COMPANY LIMITED, a British Company, of Honeypot Lane, Kingsbury, London N.W.9., and SIDNEY LIDDERDALE SCARLETT-SMITH, a British Subject of the Company's address do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to slide rules i.e. calculating devices having relatively movable members bearing co-operating scales, and has for an object the provision of a slide rule which facilitates the calculation of areas in square yards and square feet and the cost in pounds shillings and pence of covering such areas with material of which the cost per unit area is known.

According to the invention a slide rule is provided with a first part having three logarithmic scales thereon and indicating respectively units of length, units of value, and a scale of numerical units, and a second part carrying four further logarithmic scales and indicating respectively units of value, units of length, a first scale of numerical units and a second scale of numerical units, the said first and second parts being movable with respect to each other to enable any one of the said three scales to be adjustably positioned with respect to any one of the said four further scales.

The slide rule may be of flat rectangular, flat circular, or of cylindrical construction and is especially adapted for use in estimating the quanity and cost of flooring materials but it is equally applicable for calculating units of area from the linear dimensions of an area and for calculating the value of the area at a given cost per unit. In addition the normal operations of multiplication and division can be effected on the slide rule.

One embodiment of the invention will now be described with reference to the sole figure of the accompanying drawings illustrating in plan view a flat rectangular slide rule according to the invention.

As shown in the drawing the slide rule comprises in known manner a base or stock 1 of elongated rectangular shape and slidably supporting intermediate its width a longitudinally extending slide 2, and also a cursor (not shown) slidably supported on the stock 1.

The stock 1 has four logarithmic scales engraved or otherwise delineated thereon, the said scales comprising:—

(a) A price scale S marked in pence and shillings from threepence to twenty shillings,

(b) A linear dimension scale A marked in inches and feet from 4 inches to 30 feet,

(c) A numerical scale D of from 1 to 100, and

(d) A numerical scale F of from 9 to 900.

In similar manner the slide 2 bears three logarithmic scales as follows:—

(a) A linear dimension scale B marked in inches and feet from 4 inches to 30 feet, this scale being the inverse of the scale A of the stock 1,

(b) A price scale P marked in pence and shillings from threepence to twenty shillings, this scale being the inverse of the scale S of the stock 1, and

(c) A numerical scale C of from 1 to 100.

In employing the slide rule for the calculation of the area of a rectangle, the corresponding linear dimensions are set on scales A and B and the area is read in square yards on scale D or in square feet on the scale F. Thus for example to find the area of a room 20 feet 6 inches long by 9 feet 4 inches wide the cursor is set with its line over 20 feet 6 inches on a scale A and the slide is moved until 9 feet 4 inches on scale B registers with the cursor line. The cursor is then moved to register its line with the indication 1 on scale C and the area in square yards is then

[Price 4s. 6d.]

Price 33p

indicated by the cursor at 21.3 on scale D or in square feet at 192 on scale F.

In order to calculate the area of a circle the radius of a circle is set on scales A and B and the area is read on scale D under the mark π on scale C. For example to calculate the area of a circle having a diameter of 15 feet 6 inches, the cursor is set on scale A at 7 feet 9 inches i.e. the radius of the circle, and the slide is moved to bring 7 feet 9 inches on scale B under the cursor line. The cursor is then moved into register with π on scale C and the area is read off in square yards at 21 on scale D or in square feet at 189 on scale F.

If the area is less than 1 square yard the indication 1 on scale C will be positioned outside the scale D. In this case the area is read on scale D and F under the marking 100 on scale C and the reading is then divided by 100. Thus for example the area of a strip 21 feet long by 4 inches wide is 0.78 square yards or 7.0 square feet.

When it is desired to estimate the cost of covering an area at a given cost per area, scales P and D or S are employed. Having found an area as above described the cursor is positioned over the corresponding area indication on scales D and F and the slide again moved until the required unit cost value on scale P is in register with the cursor line. The total cost in pounds is then read on scale D under the indication 1 on scale C.

To calculate for example the cost of covering an area of 25 square yards with material costing 7/7d. per square yard, the value 7/7d. on scale P is registered with 25 on scale D and the total value of £9.45 is read on scale D under the indication 1 on scale C. If the total value is less than £1 it can be read directly in shillings and pence on scale S.

It will be apparent that the slide rule according to the invention is especially adapted for calculating readily and quickly for example floor areas and the cost of covering such areas. In the embodiment described with reference to the accompanying drawing, the scales are so chosen and arranged that:

(1) For linear dimensions between 4 inches and 30 feet the area in square feet or square yards (and decimals thereof) may be determined without decimalising the linear inches and with one movement of the slide.

(2) For values per square foot or square yard between threepence and £1, the value in pounds (and decimals thereof) may be read without decimalising the shillings or pence and with one movement of the slide.

(3) For values per square yard between threepence and £1 and for yardage values of less than £1, the value in shillings and pence (and fractions thereof) may be read without decimalising the shillings or pence and with one movement of the slide.

In addition, the scales C and D are available for carrying out normal operations of multiplication and division.

It will be understood that when for example the slide rule is required for use in countries having a decimal coinage, the value scales S and P will be graduated from 1 to 100 and from 100 to 1 respectively.

WHAT WE CLAIM IS:—

1. A slide rule provided with a first part having three logarithmic scales thereon and indicating respectively units of length, units of value, and a scale of numerical units, and a second part carrying four further logarithmic scales and indicating respectively units of value, units of length, a first scale of numerical units and a second scale of numerical units, the said first and second parts being movable with respect to each other to enable any one of the said three scales to be adjustably positioned with respect to any one of the said four further scales.

2. A slide rule substantially as hereinbefore described with reference to the accompanying drawing.

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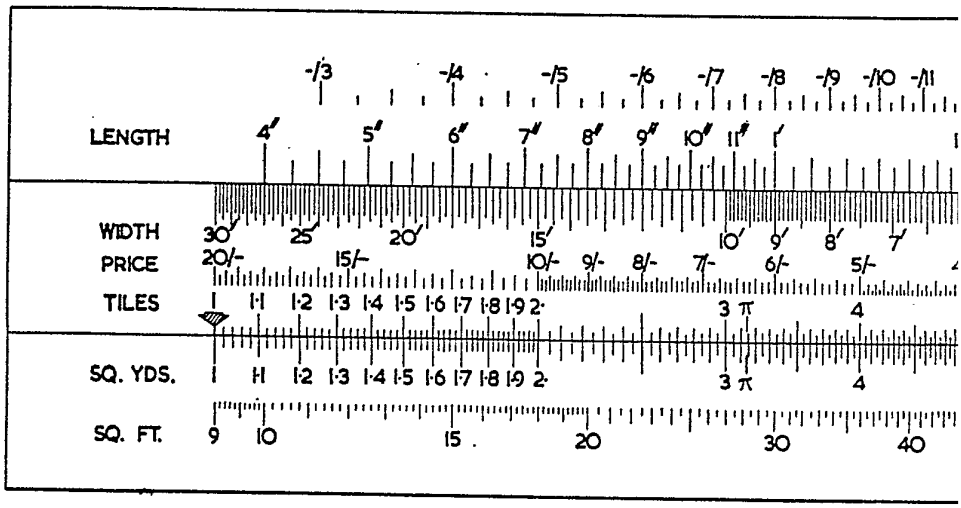
-/3 -/4 -/5 -/6 -/7 -/8 -/9 -/10 -/11
LENGTH
4′ 5″ 6″ 7″ 8″ 9″ 10″ 11″ 1′
WIDTH
30′ 25′ 20′ 15′ 10′ 9′ 8′ 7′
PRICE
20/- 15/- 10/- 9/- 8/- 7/- 6/- 5/-
TILES
1 1·1 1·2 1·3 1·4 1·5 1·6 1·7 1·8 1·9 2· 3 π 4
SQ. YDS.
1 1·1 1·2 1·3 1·4 1·5 1·6 1·7 1·8 1·9 2· 3 π 4
SQ. FT.
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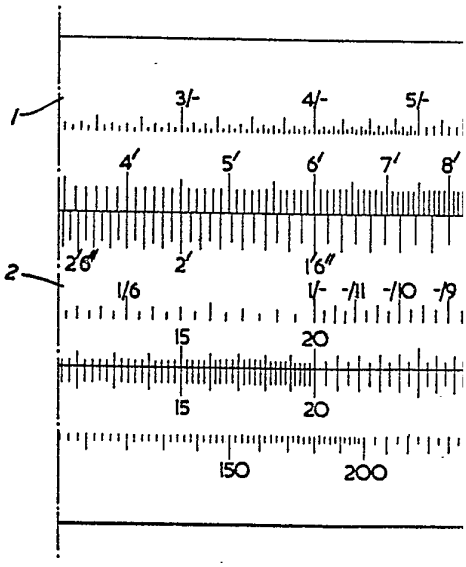
1
3/- 4/- 5/-
4′ 5′ 6′ 7′ 8′
2′6″ 2′ 1′6″
2
1/6 1/- -/11 -/10 -/9
15 20
15 20
150 200

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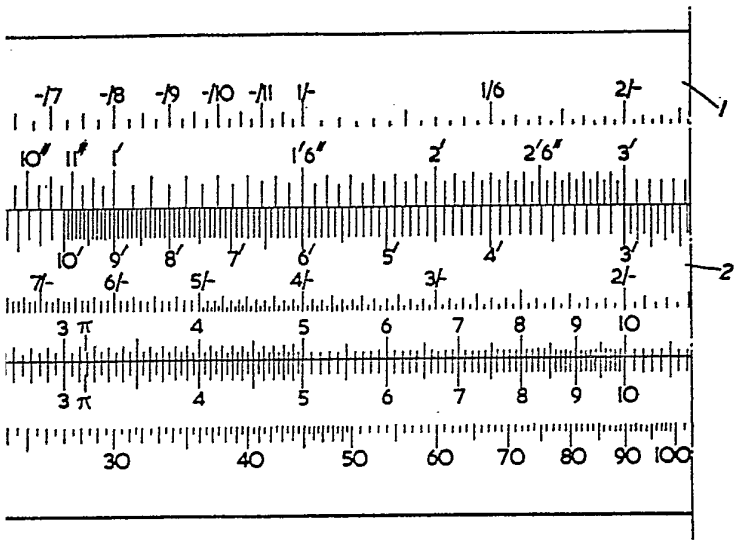
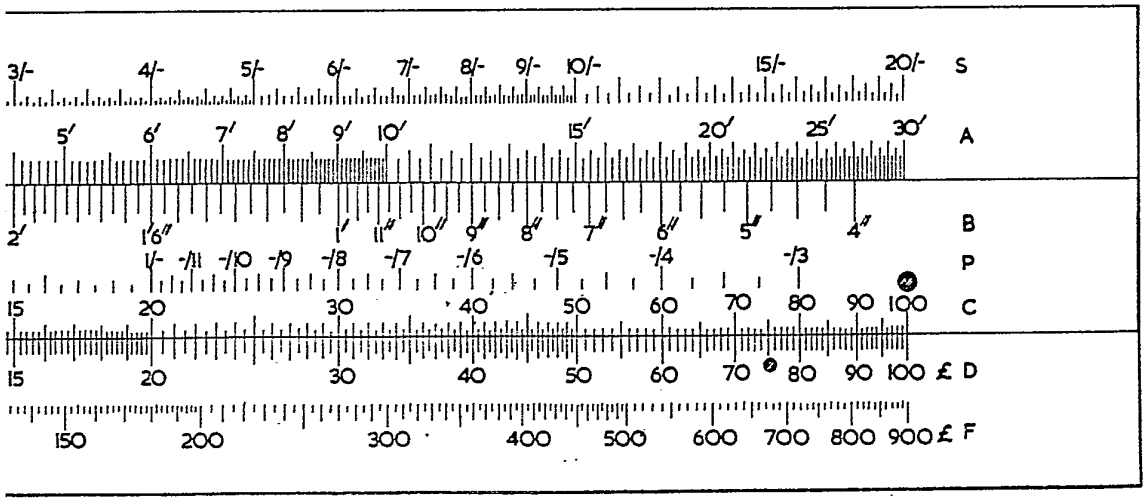
1 SHEET *This drawing Is a reproduction of the Original on a reduced scale*





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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*