

RESERVE COPY PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in Combined Tape Measures and Slide Rules.

I, OTTO BRÄCHVOGEL, of No. 2, Wohlgemutstrasse, Berlin-Baumschulenweg, Germany, of German Nationality, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

Logarithmic calculating devices are known in which the scales are arranged on tables, rules, circular discs, cylinders or polygonal prisms. Further, logarithmic calculating means exist, in which two or more metal or non-metallic bands guided side by side over rollers or the like serve as carriers of the scales. Calculating tape measures are also known, which are used in conjunction with a rigid scale bar or with a tape measure case provided with a scale on its circumference. A calculating device is further known in which a so-called tailor's tape measure is provided with a logarithmic scale, on which, after folding over one end of the tape and holding together or bringing opposite one another two figures on the front and rear sides, the folded over end indicates the product of the two figures on the band proper.

This invention relates to an improved combined tape measure and slide rule with a steel band of curved cross-section and provided with scales on both sides rolled in a case and adapted to spring out therefrom when pressure is exerted on a brake strap and is characterized in that one end of the steel band bent in known manner into the position for calculation is connected with the other band portion by two shiftable hinged clips provided with adjusting or reading marks, which clips can be fixed on the bent over band part and serve as guide for the other band part. The hinged clips are of such length that, when both steel band portions are embraced by the clips, about one quarter of the width of the bent over portion of the band lies behind the other portion of the band. According to a further feature of the invention the hinged clips, when not in use, are accommodated in a cap adapted to be slipped on to the brake strap of the case and bridging same and which does not impede the use of the steel band as a tape measure.

One side of the band is provided with the usual metric and inch scales and an ordinary logarithmic scale, its other side, besides having the usual, ordinary logarithmic scale, is also provided in known manner with a square root scale corresponding to the logarithmic scale.

An embodiment of the invention is illustrated in the accompanying drawing in which:—

Fig. 1 is a perspective view showing a combined steel tape measure and slide rule in calculating position.

Fig. 2 shows a hinged clip in side elevation in open position.

As shown in Fig. 1 the bent over band portion 1 lies with about one quarter of its width under the other shiftable band portion 2.

Each of the hinged clips 3 comprises a plate 14 on one side of which a flap 15 is hingedly mounted, which flap carries at its other end a spring fastening 4 adapted to engage over a hook 16 on the other side of the plate 14. Two grooves 5 are provided on the plate 14 above the hook 16 and form a guide for the steel tape measure. The tape measure is slipped into these grooves 5 of the two clips 3 and then folded over, the folded over portion 1 being then inserted between the plates 14 and the flaps 15 of the clips. The clips 3 are then fixed in the desired position on the folded over portion of the tape measure by engaging the spring fastening 4 in the hook 16.

By shifting the band portion 2 in the guide slot 5 any desired logarithmic length can be added to or subtracted from a set length. If, for example two figures are to be multiplied, the half unrolled band is folded over. The hinged clips 3 are then attached to the two adjacent or partly overlapping band portions 1 and 2 so that the fastening 4 is situated on the lower band portion 1. After the first clip has been brought into such a position that its mark registers with "1" of the ordinary logarithmic scale and the mark of the second hinged clip is adjusted to one of the calculation factors, the fasten-

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Price 4s 6d

ings 4 are locked so that the hinged clips are clamped securely on the lower band portion 1, whereas the upper band portion 2 remains slidable in the clips. If the freely slidable band portion 2 is now shifted so that the mark of the first hinged clip registers with the value of the other calculation factor, the mark of the second hinged clip indicates the product of the two factors. When dividing, the upper band portion 2 must be shifted so that the divisor clip stands on the dividend. However the two figures to be multiplied may be situated on the bent over portion or the band may be so long that it is inconvenient to handle; in this instance the two clips can be clamped on the band portion 1 so that they each indicate one of the figures, whereupon the band portion is shifted so that the mark of one of the two clips registers with the figure on the square root scale corresponding to the figure on the bent over portion of the band, the other clip will then indicate the desired product on the ordinary logarithmic scale.

Having now particularly described and ascertained the nature of my said invention and in what manner the same

is to be performed, I declare that what I claim is:—

1.—A combined tape measure and slide rule with a steel band of curved cross section and provided with scales on both sides rolled in a case and adapted to spring out therefrom when pressure is exerted on a brake strap, characterized in that one end (1) of the steel band bent in known manner into the position for calculation is connected with the other band portion (2) by two shiftable hinged clips (3) provided with adjusting or reading marks, which clips can be fixed on the bent over band part (1) and serve as guides for the other band part (2).

2.—A combined tape measure and slide rule as claimed in claim 1, characterized in that the hinged clips (3) are of such length that, when both steel band portions are embraced by the clips, about one quarter of the width of the bent over portion of the band lies behind the other portion of the band.

Dated this 19th day of January, 1933.

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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1

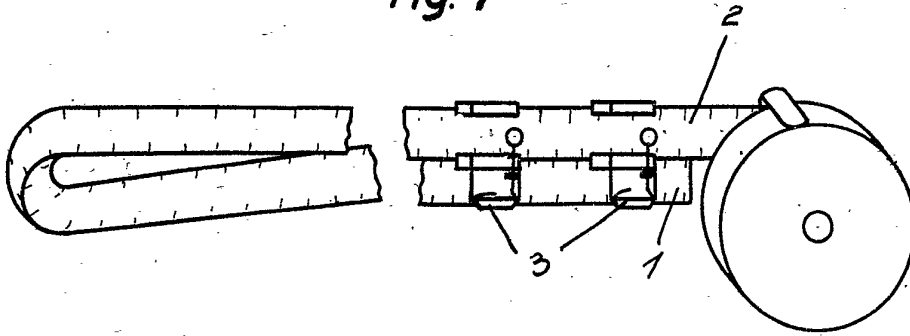


Fig. 2.

