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F. WÖMPNER

SLIDE RULE

Filed April 20, 1923

Fig. 1.

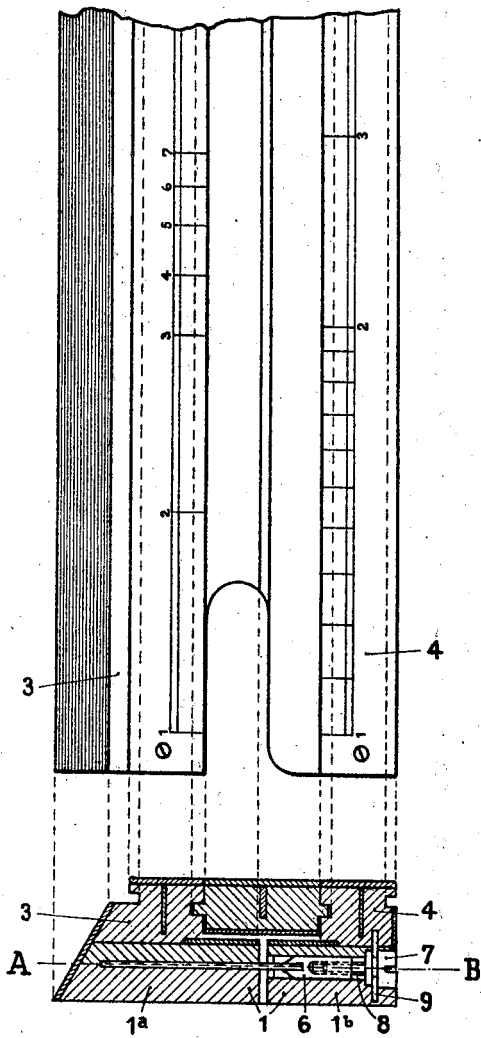


Fig. 2.

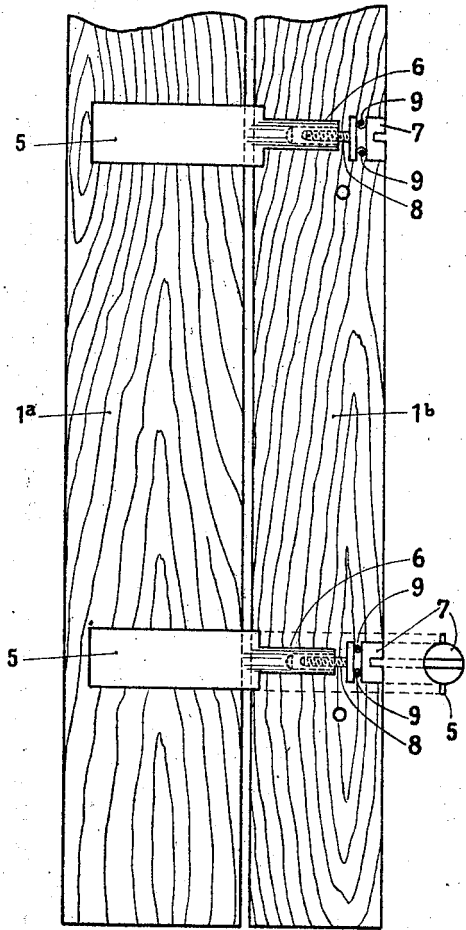


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

FRITZ WÖMPNER, OF GEROLDSGRUN, GERMANY, ASSIGNOR TO THE FIRM A. W. FABER,
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SLIDE RULE.

Application filed April 20, 1922. Serial No. 632,503.

To all whom it may concern:

Be it known that I, FRITZ WÖMPNER, a citizen of the German Reich, residing at Geroldsgrun, Germany, have invented certain new and useful Improvements in Slide Rules (for which I have filed an application for patent in Germany on the 20th of April, 1922), of which the following is a specification.

It has already been proposed to avoid the deformations of the slide rules due to influences of the weather, and the inconveniences resulting from the same, by giving a special shape to the body of the slide rule. It has for instance been proposed to subdivide the body of the rule which serves as guide for the slide, said parts being connected by springs. This improvement of the construction of the slide rule is however not an absolutely satisfactory solution of the problem as, besides the springs, guiding elements are provided which ensure the correct mutual position of the parts of the rule-body. But even if such guiding elements are used the parts of the rule-body are liable to assume an inclined position if the slide is pulled out partly and even more so if it is pulled out almost completely. The tension of the springs varies further if the shape of the rule-body is altered so that the cheeks of the rule-body are not constantly pressed against the slide at the same pressure.

According to another form of construction the bottom plate of the rule-body has incisions in longitudinal direction designed to produce elasticity in transverse direction. The mutual distance of the two cheeks of the body is adjusted by means of adjusting screws with adjusting nuts. This form of construction permits a mechanical adjusting of the two cheeks the one with regard to the other but it does not ensure an elastic pressure of the same against the slide. With this construction no uniform sliding of the slide in the rule-body is therefore ensured, so that, besides the adjusting screws, a blade spring has to be used which bridges over the entire bottom of the rule-body and serves for pressing the two cheeks the one against the other. This form of construction presents however the inconvenience that the tension of the spring will be altered if the

adjusting screws are tightened or loosened, the friction between the cheeks and the slide being varied also.

This invention has for its object the thorough solution of the problem which is effected with the aid of the well known lamellæ of band steel bridging over a longitudinal slot which divides the rule-body into two parts. The lamellæ of steel band are fixed, according to the invention, in one of the parts of the body only, their other ends being mounted with the aid of guiding cylinders constructed like nuts in the other part of the body so that they may be displaced in longitudinal direction and they may be adjusted by means of screws which are mounted revolubly in this part of the rule-body but so that they cannot be displaced in the same.

Owing to this arrangement a uniform sliding of the slide in the rule-body is ensured, independently of the alteration of shape of the rule body produced by the influences of the weather. This form of construction is further much simpler than the known forms of construction as, besides these lamellæ of band steel no special guiding elements nor adjusting screws are required, the lamellæ being constructed so that they serve at the same time as guiding means and as adjusting means.

On the drawing an embodiment of the invention is shown by way of example.

Fig. 1 shows the slide rule in plan view.

Fig. 2 is a cross section, and

Fig. 3 is a longitudinal section on line A—B of Fig. 2.

The slide rule consists in the well known manner of the bottom plate 1 and the two side cheeks 3, 4 and of the slide which is not shown on the drawing. The rule-body is subdivided into two parts 1^a, 1^b by a longitudinal slot. In the one part 1^a the lamellæ 5 of band steel, known per se, are embedded and fixed by means of screws or the like. The lamellæ 5 comprise each a guide cylinder 6 constructed like a nut and designed to be inserted into corresponding transverse borings of the other part 1^b of the rule-body. In this part 1^b screw bolts 8 with heads 7 are inserted at convenient points. A displacement of the screw heads 7 in longitudinal direction is prevented by the pins 9 driven from below upward through the

rule-body and engaging with circular grooves of the screw heads. The screw heads are consequently always flush with the outer edge of the rule-body.

- 5 It is evident that the distance between the two parts of the rule-body may be altered by turning the screws as they are not movable in longitudinal direction, the guide pins and the lamellæ of band steel fixed on the same being mounted in the part 1^b of the rule-body so that they cannot rotate but move in this part. The tension of the springs by which the cheeks of the rule-body are pressed against the slide is always
10 the same at any distance between the two parts of the rule-body. This distance can be adjusted according to the dimensions which the parts of the rule-body assume according to the actual conditions of weather
15 and temperature.

The lamellæ of band steel could carry screw bolts instead of the guide cylinders

in which case the heads 7 ought to be constructed like nuts.

I claim:—

A slide rule comprising in combination a rule-body divided into two parts by a longitudinal slot, lamellæ of band steel embedded and fixed in one of said parts of the rule body, guide cylinders acting like nuts projecting from the ends of said lamellæ and engaging with the other part of the rule body and screws fixed in said other part of the rule body so that they can rotate but not move in longitudinal direction and engaging with said guide cylinders to adjust the width of the gap between said parts of the rule body.

In testimony whereof I affix my signature in presence of two witnesses.

FRITZ WÖMPNER.

Witnesses:

ALEXEI RILLIPPOFF,
ALEXANDER DE SOTO.