No. 694,258. Patented Feb. 25, 1902.

J. H. C. DENNERT.

SLIDE RULE.

(Application filed July 25, 1901.)

(No Model.)

Fig. 2.

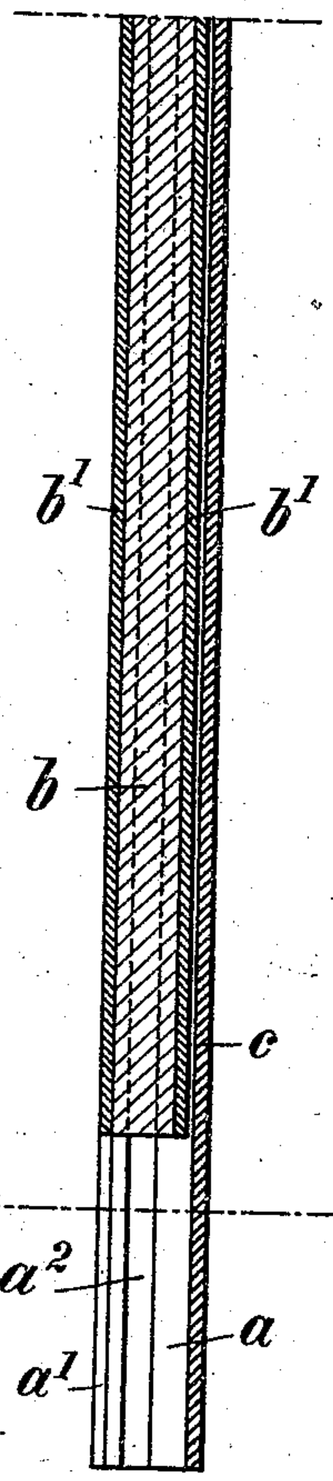


Fig. 1.

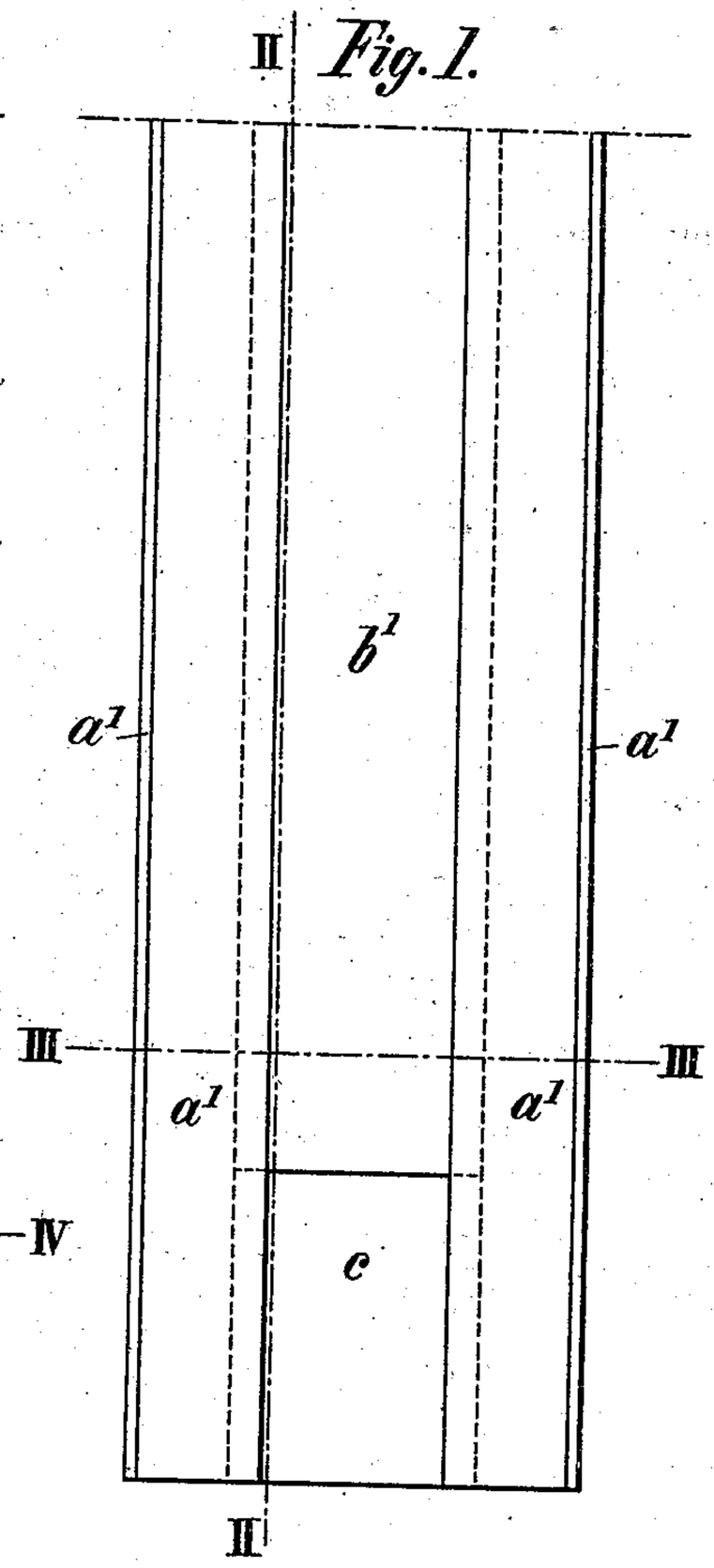


Fig. 4.

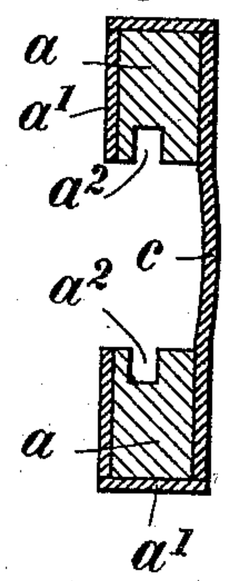
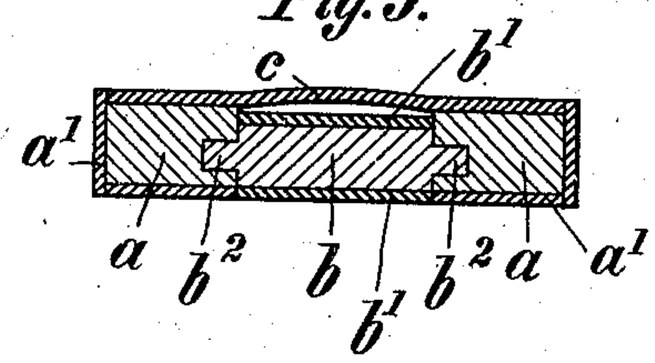


Fig. 3.



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SLIDE-RULE.

SPECIFICATION forming part of Letters Patent No. 694,258, dated February 25, 1902.

Application filed July 25, 1901. Serial No. 69,728. (No model.)

To all whom it may concern:

Be it known that I, JEAN HEINRICH CARL DENNERT, a subject of the German Emperor, and a resident of Altona, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Slide-Rules, of which the following is a specification.

The present invention relates to improvements in slide-rules.

The object of the improvements is to provide means which allow and secure a proper fitting of the slide in the guide-grooves of the rule in spite of the shrinkage or expansion of the wood of which the rule is made, so that binding between the slide and the rule proper is reliably obviated and an easy and steady motion or operation of the slide always secured.

With this end in view my invention consists of certain novel features of construction and combinations of parts, as will be hereinafter fully described and pointed out, with reference to the accompanying drawing, in which—

Figure 1 is a top or plan view of my improved slide-rule. Fig. 2 is a longitudinal section of the said slide-rule, taken on the line II II, Fig. 1. Figs. 3 and 4 are cross-sections taken on the lines III III, Fig. 1, and IV IV, Fig. 2, respectively.

Similar letters refer to similar parts throughout the several views.

The improved slide-rule consists of two wooden parallel bars or side pieces a a, preferably lined with celluloid plates a' and connected by a bottom plate c, capable of yielding in a transverse direction, and of a wooden slide b, likewise lined at top and bottom with celluloid plates b' and arranged in well-known manner, so as to slide with lateral tongues b^2 in corresponding guide-grooves a^2 of the parallel bars a. The bottom plate may be made, preferably, of celluloid and slightly curved outwardly in its middle portion, as shown in the drawing, so as to insure a yielding of such bottom plate in a transverse direction to the rule.

The above-described arrangement of the bottom plate enables the slide to fit always readily and snugly between the parallel bars and to be moved along therein without any binding, even if the wood of the slide has somewhat expanded in the transverse direction, because the yielding bottom plate allows the parallel bars to correspondingly move a small distance apart. On the other hand, when the slide or its wood, respectively, shrinks the yielding bottom plate correspondingly contracts the said parallel bars, thereby securing the required proper contact between the latter and the slide. The disadvantageously-acting alterations of the dimensions of the wood (shrinkage or expansion) caused by the influence of weather or changes in the temperature, respectively, are thus reliably neutralized.

Finally, it may here be stated that slide-rules are made or manufactured, as is well known, only of such wood which does not expand or shrink in its longitudinal direction.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A slide-rule comprising parallel bars provided with a guide-groove in their proximate faces, a slide slidable along and guided by said groove, and a more or less resilient supporting-plate, to which the parallel bars are secured, said plate provided with a longitudinal outwardly-curved center portion or bulge, for the purpose set forth.

2. A slide-rule, comprising parallel bars, a slide slidable between and along said bars and a supporting-plate to which said bars are secured, said plate extending throughout the length of the bars and adapted to expand and contract in a direction at right angles to the direction of motion of the slide, for the purpose set forth.

JEAN HEINRICH CARL DENNERT.

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