J. HEMMI.

SLIDE RULE.

APPLICATION FILED MAR. 30, 1917.

1,329,902. Patented Feb. 3, 1920.

Fig. 1.

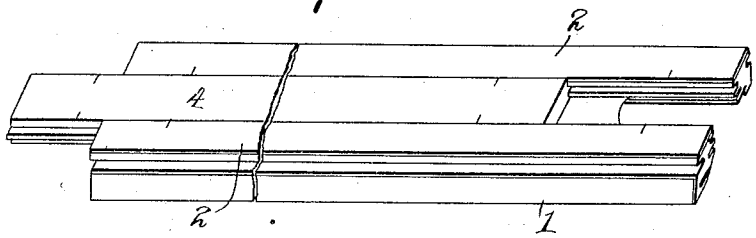


Fig. 3.

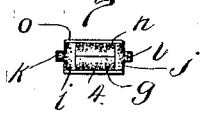


Fig. 2.

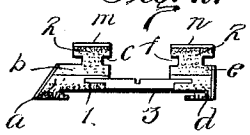


Fig. 4.

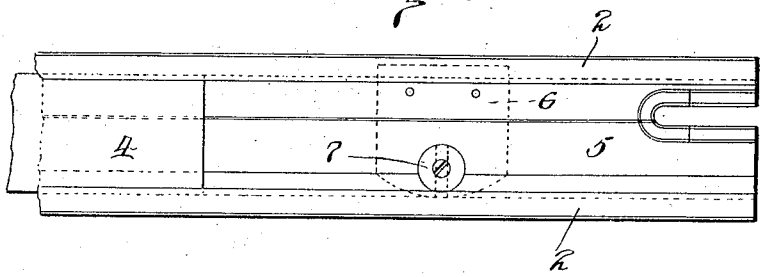
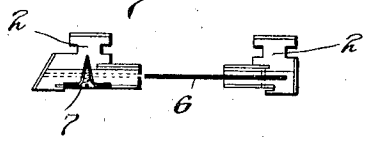


Fig. 5.



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UNITED STATES PATENT OFFICE.

JIRO HEMMI, OF TOKYO, JAPAN.

SLIDE-RULE.

1,329,902. Specification of Letters Patent. Patented Feb. 3, 1920.

Application filed March 30, 1917. Serial No. 158,555.

To all whom it may concern:

Be it known that I, JIRO HEMMI, a subject of the Emperor of Japan, residing at Tokyo, Japan, have invented certain new and useful Improvements in Slide-Rules, whereof the following is a specification.

The object of this invention is to provide a slide rule having a hard antifriction and non-absorbent surface which will avoid the expansions and contractions due to changes from dry to moist or moist to dry atmospheres and facilitate the movement of the slide.

In the accompanying drawings;—

Figure 1 is a perspective view of a slide rule embodying this invention.

Fig. 2 is an end view of the stock or body.

Fig. 3 is an end view of the slide or strip.

Fig. 4 is a plan of a modified slide rule and

Fig. 5 is a transverse sectional view thereof.

In the form of embodiment shown in Figs. 1 to 3, this slide rule comprises a laminated stock 1 composed of parallel bars 2, 2 disposed apart from each other, an intermediate plate 3 connecting said bars and a laminated slide 4 movable between said bars.

One bar of the stock 1 is composed of a base layer *a* and a top layer *b*, the latter being provided with a groove or slideway *c* on its inner face and the other bar is composed of a base layer *d* and a top layer *e*, the latter being provided with a slideway or groove *f* on its inner face.

The slide 4 is composed of a base layer *g*, a top layer *h* and side layers *i* and *j* disposed vertically of said base and top layers and covering the edges thereof. The said layer *i* is provided on its outer face with a tongue *k* adapted to fit the slideway *c* and the side layer *j* is provided with a tongue *l* adapted to fit the slideway *f*. The base and top layers *g* and *h* are composed of bamboo strips disposed back to back and cemented together and the side layers *i* and *j* are composed of bamboo strips cemented to the sides of said base and top strips and covering the joint between them.

The fibers of bamboo are always longitudinal and of a hard and silicious character which is non-absorbent of moisture and provides smooth, unchanging antifriction surfaces between the slide and its stock.

The parallel bars 2, 2 may be provided with scale plates *m*, *n* of celluloid or other suitable material containing the graduations and the slide may be provided with a scale plate *o* composed of celluloid or other suitable material for its graduations.

The parallel bars of the stock are connected by the sheet metal strip 3 so that, if excessive clearance is produced between the contact surfaces of the stock and the slide by wear, the sheet metal strip may be slightly bent in such a manner that the two edges can approach each other.

In another embodiment of this invention, illustrated in Figs. 4 and 5, the parallel bars 2, 2 of the stock are separable one from the other, a connecting plate 6 being fastened to one of said bars and detachably connected to the other by inserting the free edge thereof in a slot in said other member. The plate 6 may be fastened to said other member by a set screw 7 or other suitable means. By this construction the two parallel bars may be adjusted to increase or decrease the clearance between them.

It must be understood that the present invention is not limited to the constructions above described, but the construction may be modified within the scope of this invention.

I claim as my invention:

A slide rule comprising a stock composed of connected parallel bars constructed of layers of bamboo cemented together, and a slide movable between said bars, said slide being composed of cemented layers of bamboo, the hard and silicious character of the bamboo fibers forming non-absorbent antifriction sliding surfaces between said members.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JIRO HEMMI.

Witnesses:
R. KUSAKA,
H. F. HAWLEY.