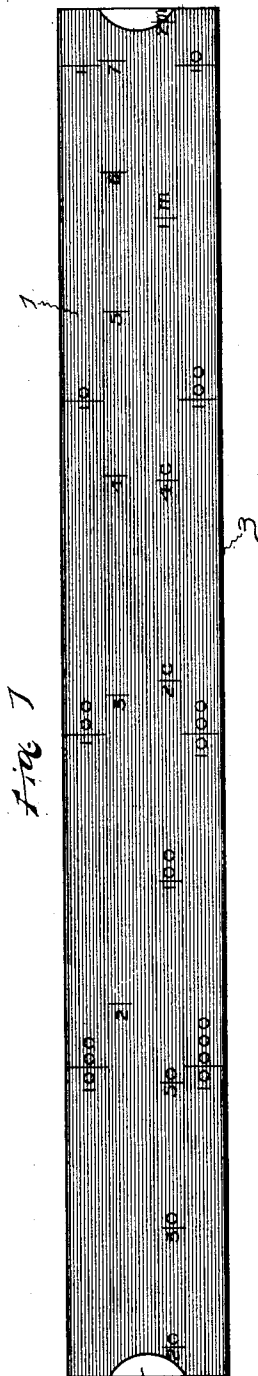


(No Model.)

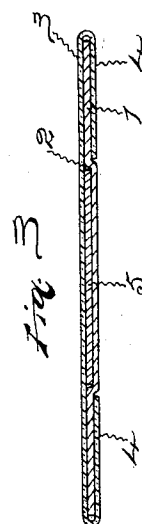
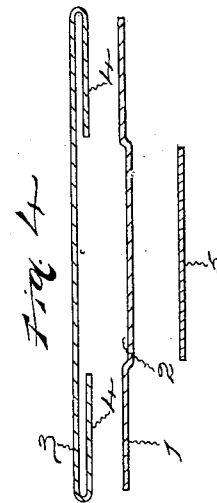
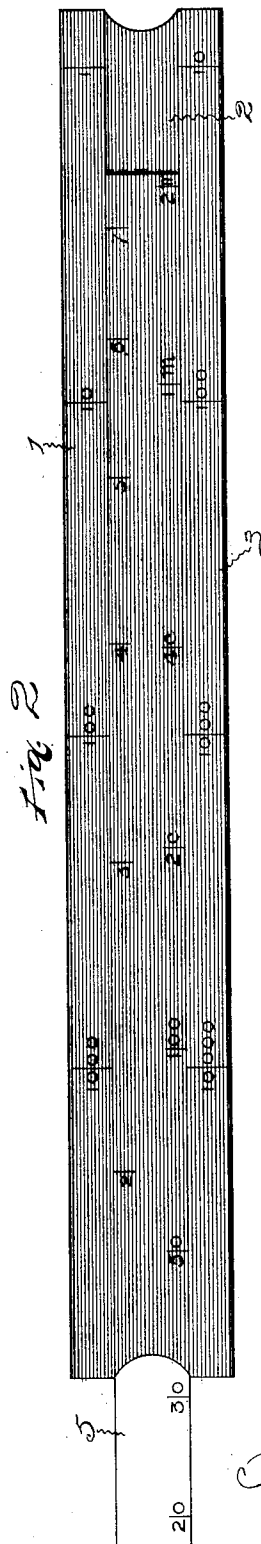
E. HILL.
SLIDE RULE.

No. 535,375.

Patented Mar. 12, 1895.



Witnesses:
E. J. Hyde.
C. Bushland.



Inventor:

Ebenzer Hill,
by
Harry R. Williams,
att'y.

UNITED STATES PATENT OFFICE.

EBENEZER HILL, OF SOUTH NORWALK, CONNECTICUT.

SLIDE-RULE.

SPECIFICATION forming part of Letters Patent No. 535,375, dated March 12, 1895.

Application filed December 23, 1893. Serial No. 494,556. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER HILL, a citizen of the United States, residing at South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Slide-Rules, of which the following is a specification.

The invention relates to the class of rules or scales which have one indexed part movable with relation to another indexed part, and the object is to provide a simple and convenient instrument of this class which has the indexed parts loosely but firmly held together by a simple and easily formed part that completely protects the lettering or divisions of the scales from wear or damage tending to obliterate or render difficult the reading of the notations, the instrument also being so constructed that a number of different sets of scale parts, which can be very cheaply furnished with varying calculating notations, may be used with a single holder.

Referring to the accompanying drawings: Figure 1 is a plan of the rule. Fig. 2 is a similar view with the slide drawn out to illustrate the use of the instrument. Fig. 3 is a greatly enlarged transverse section with the parts assembled, and Fig. 4 shows transverse sections of the parts separated.

The rule part, 1, of the instrument shown may be formed of a strip of paper, parchment, or thin celluloid of suitable width and desired length. This thin strip is stamped or otherwise formed so as to have a longitudinal groove, 2, from end to end of its front face, which groove is usually made in the central portion of the strip so as to leave raised portions of equal width on each side, on which any necessary lettering or divisions may be marked or printed to provide notations for the desired calculating scale to be produced. This rule part is slipped into a transparent cover or holder, 3, of about the same width, which cover or holder is preferably formed from a thin strip of transparent celluloid with its edges, 4, bent or folded around so as to hold and protect the edges of the rule part, these folded edges of the cover usually extending on the back of the rule part up to the stamped or depressed portion, as shown in the assembled sectional view. When the thin stamped rule part with the desired notations is slipped into

the cover of this form the front and back faces of the instrument are practically smooth, but there is left a longitudinal pocket between the depressed portion of the rule part and the front face of the transparent cover, into which pocket is slipped the slide part, 5, that may be formed of a thin strip of paper, parchment or celluloid. Upon this slide is printed or otherwise marked the notations that are complementary to the notations of the rule part so that the desired calculation can be correctly made without mental effort by moving this slide in this longitudinal pocket of the stamped rule part, and registering the proper divisions of the scales.

The ends of the cover and the rule part are usually cut out as shown to form finger openings so that the slide may be easily grasped for moving.

A simple, cheap, convenient and efficient embodiment of my invention can be produced by forming the transparent protecting cover or holder for the adjustable parts of a thin strip of celluloid, which is easily cut and folded to the desired shape to receive and temporarily hold any rule part having the scale that it is desired to use, which rule part can be made of a simple strip of paper of the proper thickness with the desired notations printed on the sides of its face. This rule part of paper is readily stamped to receive the slide, which can be a simple strip of paper upon which are printed the proper notations to be used with the scales of the rule part.

Any number of rule and slide parts having notations of different calculating scales may be provided and sent with one cover, and those that are to be used can be quickly slipped into the cover which firmly holds the rule part temporarily against movement while permitting the free movement of the slide part so that the scales can be readily adjusted with relation to each other for obtaining the desired calculations. The transparent cover protects and holds the thin rule and slide parts and also covers without obscuring the notations of the scales on both parts so that they can never become damaged or obliterated by handling or other wear, and the folding under of the edges of this protecting cover and holder so stiffens the structure that thin rule and slide parts may be used without danger of becoming

bent or broken, at the same time providing a very light and handy instrument.

I claim as my invention—

1. A slide rule consisting of a rule bearing
5 notations, a longitudinally moving slide bearing notations, and a transparent cover extending over the front with its edges extending around the edges and over a portion of the back of the rule and holding the parts in
10 movable relation with each other, substantially as specified.

2. A slide rule consisting of a rule bearing notations formed of a thin piece of material having a longitudinal groove from end to end,
15 a slide bearing notations longitudinally movable in said groove, and a transparent cover formed to extend over the edge and loosely hold and protect the rule and also to keep the slide in the groove in the rule, substantially
20 as specified.

3. A slide rule consisting of a rule formed

of a thin piece of material having its longitudinal central portion depressed below the sides, a thin slide fitting the depressed portion with its upper face flush with the faces
25 of the sides, and a transparent cover extending over the front face and around the edges and on the back face to the depressed portion, substantially as specified.

4. A slide rule consisting of a grooved strip
30 of paper having notations on the raised sides of the groove, a strip of paper with notations longitudinally movable in said groove, and a cover of transparent celluloid extending over the edge and loosely holding and stiffening
35 the grooved strip of paper and also holding the movable strip in the groove, substantially as specified.

EBENEZER HILL.

Witnesses:

J. E. SLATER,
C. J. HILL.