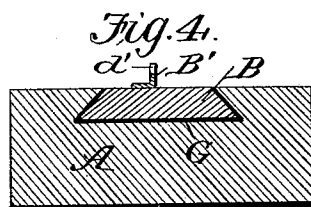
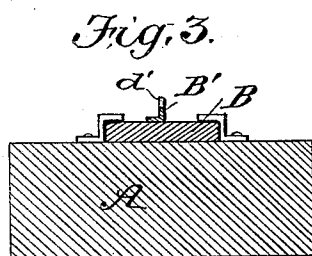
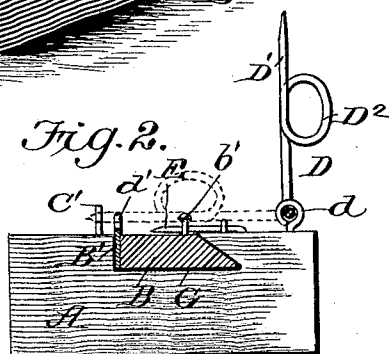
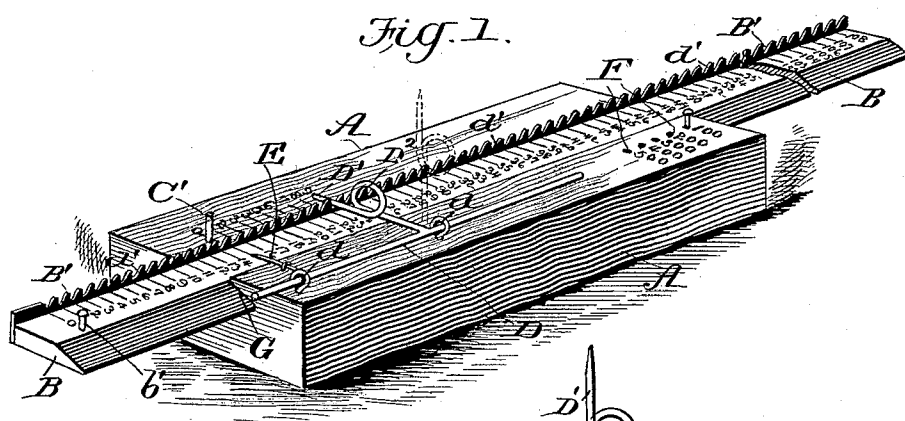


(No Model.)

W. A. COPELAND, C. ROBERTS & T. J. McCRARY.
CALCULATOR.

No. 569,544.

Patented Oct. 13, 1896.



WITNESSES:

Jos. A. Ryan
Geo. S. Brock

INVENTORS
Wesley A. Copeland
Cyrus Roberts
Thomas J. McCrary
By *Munn & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WESLEY ALBERT COPELAND, CYRUS ROBERTS, AND THOMAS JEFFERSON
MCCRARY, OF ALVORD, TEXAS.

CALCULATOR.

SPECIFICATION forming part of Letters Patent No. 569,544, dated October 13, 1896.

Application filed May 13, 1896. Serial No. 591,399. (No model.)

To all whom it may concern:

Be it known that we, WESLEY ALBERT COPELAND, CYRUS ROBERTS, and THOMAS JEFFERSON MCCRARY, of Alvord, in the county of Wise and State of Texas, have invented a new and useful Improvement in Calculators, of which the following is a specification.

Our invention relates to that class of calculators in which a bar having a series of numbers thereon slides in a frame or base also provided with a series of numbers, and has for its object to provide a simple, cheap, and accurate calculator which is susceptible of easy and rapid manipulation.

To this end our invention consists of a frame or base piece provided with a series of numbers carrying a sliding bar also provided with a series of numbers and a sliding lever or pusher for moving said sliding bar. It further consists in certain details of construction, which will be hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of our improved device. Fig. 2 is an end view partly in section. Fig. 3 is a cross-section showing a modified form. Fig. 4 is a section of another modification.

A represents a frame or base piece of any suitable size and material and has in one of its faces a groove G, one of whose edges is preferably undercut. Along one edge of this groove, preferably the straight edge, are placed the digits from "0" to "9," inclusive, the zero being near the bottom of the frame A, the remainder of the numbers extending upwardly in regular order. At the zero-mark a pin or stop C' is placed in the frame, the purpose of which will be described later on.

On the other side of the groove the lever or pusher D is slidably held by the screw-eyes or guides d. The lever or pusher D comprises a straight portion having at or near its center the pointer D', extending at right angles to the main portion and having a handle or lifting portion D² at about its center. To the face of the frame, and on same side of the groove G on which the sliding lever or pusher D is situated, an index pointer E is rigidly secured, extending partly across the groove and being placed exactly opposite and pointing to the zero-mark on the opposite

edge of the groove. Within said groove G is placed the sliding bar B, one of whose longitudinal edges is beveled to correspond to fit the undercut edge of the groove, and thus the bar B is held in said groove in such a manner as to be prevented from falling face outward from the groove. The sliding bar B is provided on its straight longitudinal edge with a serrated metal plate B', similar in appearance to a saw-blade, extending outwardly at right angles from the said bar B. The teeth or serrations d' on B' are of uniform size and distance apart and extend from end to end of the bar B. Commencing at the lower end and extending to the top, figures from "0" to "108" are placed on the sliding bar B, one number being opposite each one of the notches between the teeth d'. Near the bottom of the bar B is placed a pin or stop b', which, by abutting against index pointer E, prevents the sliding bar B from being raised above its proper starting position. Near one of the upper corners, or any other suitable place on the base-block A, is placed a series of peg-holes F, which are numbered "100," "200," "300," "400," "500," and so on.

To operate our calculator, the sliding bar B is so positioned in the groove that the zero on said bar is exactly opposite the zero on the frame or base A on the opposite edge of the groove.

The pointer D' of the sliding lever or pusher D is then swung over and moved up or down until it is opposite the first number it is desired to add on the sliding bar. It is then dropped into the serration opposite that number, when the whole lever or pusher D is slid downward, carrying the sliding bar B with it, until the projecting end of the pointer D' strikes the pin C', which is placed at zero on the base-piece A. This operation is repeated for the next number, and when this has been done the index-pointer E will indicate the correct result on the sliding bar B.

To illustrate, suppose that it is desired to add

437	100
756	
982	
2175	

See that zero on the sliding bar and zero on the frame are opposite and in line with each other. Swing the arm D' of the lever or pusher over and drop it in the notch opposite the figure "2" on the frame. Draw it down until D' strikes the pin C', which is zero. Repeat this operation for the "6" and "7" and the sum ("15") of the three numbers will be found opposite the index-pointer on the sliding bar B. Write down the "5" and push back the sliding bar, reserving the "1." Treat the remaining columns in a like manner, reserving the figures to be carried on the sliding bar B.

Should the amount of any single column exceed one hundred, (100,) place a peg or pin in the peg-hole marked in the "100" series of holes F, located at upper right-hand corner of frame, and duplicate the operation, reserving the surplus on sliding bar B. In this manner very long columns of figures may be added with rapidity and accuracy.

The various parts of the device may be made of wood, metal, or other suitable material and may be made plain or ornamental, as desired.

The serrated plate B' may be placed on the face of the sliding bar B instead of at one edge, and the sliding bar B may be held on the frame or base by guides instead of being seated in the groove G, as shown in Fig. 3.

The sliding bar B may be made with both edges beveled, which fit in a groove having undercut edges, as shown in Fig. 4. When this form is used, the serrated plate B' is secured to the upper face of the sliding bar B.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A calculator comprising a frame or base provided with a series of numbers, a sliding bar having longitudinal serrations thereon, and provided with suitable numbers opposite said serrations, a lever or pusher movably held to the frame or base adapted to be swung into engagement with the serrations on said sliding bar and having a sliding movement on the base, substantially as shown and described.

2. A calculator comprising a frame or base, a bar slidably connected therewith and provided with a longitudinal serrated plate, a lever or pusher movably secured to frame adapted to be swung into engagement with said serrated plate having a sliding movement on the base, and a stop on the frame or base for limiting the movement of said lever or pusher, substantially as shown and described.

3. A calculator comprising a frame or base, a stop located near the lower end of said base, a bar slidably secured to said frame, and provided with a longitudinal serrated plate, a lever or pusher movably secured by guides to said frame and adapted to have a swinging and sliding movement in said guides and provided with a projecting arm whereby it may be swung into engagement with the serrated plate on the sliding bar and pushed down until engaged by the stop on the frame or base, substantially as shown and described.

4. A calculator comprising a frame or base provided with a longitudinal guideway, a row of figures arranged at one end of the base and at one side of said guideway, a stop placed on the frame or base on the same side of the guideway and at the lowest of said figures, a series of figures at or near another corner of said frame, a lever or pusher movably held in guides on said frame and provided with a projecting pointer, an index-pointer secured to the frame opposite the stop on the frame, a bar sliding in the guideway of the frame, and having a row of figures in regular notation on its upper surface and a stop at or near its lower end, and provided with a longitudinally-serrated plate adapted to be engaged by the lever or pusher, substantially as shown and described.

WESLEY ALBERT COPELAND,
CYRUS ROBERTS.
THOMAS JEFFERSON MCCRARY.

Witnesses:

THOMAS C. CARLOSS,
V. H. SPARKMAN.