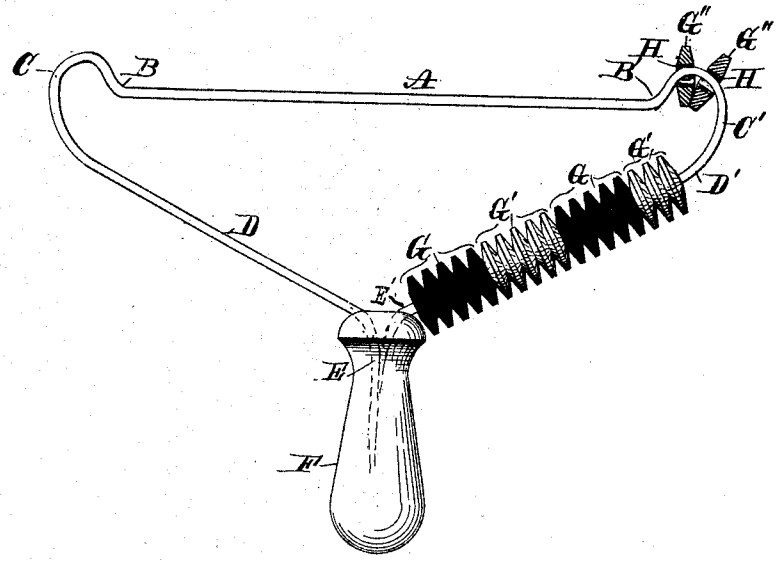
(No Model.)

G. W. BOLTON & C. H. TILLMEYER.

ABACUS.

No. 352,218. Patented Nov. 9, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE W. BOLTON AND CHARLES H. TILLMEYER, OF MILWAUKEE, WIS.; SAID TILLMEYER ASSIGNOR TO SARAH E. B. BOLTON, OF SAME PLACE.

ABACUS.

SPECIFICATION forming part of Letters Patent No. 352,218, dated November 9, 1886.

Application filed July 8, 1886. Serial No. 207,399. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. BOLTON and CHARLES H. TILLMEYER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Abacuses; and we do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawing, and to the letters or figures of reference marked thereon, which form a part of this specification.

Our invention, to be hereinafter distinctly claimed, consists in the peculiar construction of a simple and inexpensive abacus so formed as to hold all the counters on a single wire and permit the removal of all of them from the enumerating-line singly to one or both sides thereof; in the construction of the counters and the peculiar form of the wire, whereby only one counter can be removed from the enumerating-line at the same time.

The drawing is an elevation of our device.

The single counter-supporting wire of the abacus consists of the straight enumerating-line A, the angles B B′, curved ends or necks C C′, the counter reserve lines D D′, and the tangs E E′.

The straight enumerating-line A is sufficiently long to hold a number, preferably twenty, of buttons or counters, G G′, and terminates at both ends in outwardly-turned angles, intended to check the outward movement of the counters when on the line A. The neck C is a curve so proportioned that two counters, G″ G″, cannot be pushed along over the neck at the same time, because they would be so inclined inwardly toward and against each other on their inner sides by their different axles on two parts of the neck as to bind on the neck and stop their joint progress, while singly the counters may be readily moved past the angle B and over the neck C. The line D for holding the counters in reserve is inclined outwardly away from line A, whereby on each of the reserve lines D D′ sufficient space is obtained to hold all the counters that may be conveniently used on line A. The tangs E E′ are inserted rigidly in a handle, F. Strung on the wire are a number of buttons or counters, G G′, preferably twenty in number, usually of different colors, preferably in alternate series of five of a light and five of a dark color. These counters or buttons are also preferably provided with a metal bushing, H, in and about the central orifice, by and through which they are strung on the wire, whereby great smoothness and ease of motion and great endurance for the counters are secured.

When this abacus is being used to teach a child to count, the buttons are placed on the straight line A, and as they are counted they can be removed one at a time from the line A to the reserve line D or D′, or to both of them, as desired, and by this construction of the abacus a great number of interesting and instructive methods of enumeration and simple problems in numbers that will occur to an apt teacher may be readily and plainly performed.

What we claim as new, and desire to secure by Letters Patent, is—

1. An abacus consisting of a single counter-supporting wire terminating in a handle, and a series of counters thereon, substantially as described.

2. In an abacus, the straight counter enumerating-line A, the curved necks C C′, proportioned as described, and the counters G G′.

3. In an abacus, the straight counter enumerating-line A, the angles B B′, the curved necks C C′, and the outwardly-inclined reserve lines D D′, substantially as described.

4. The combination of the straight counter enumerating-line A, the angles B B′, curved necks C C′, reserve lines D D′, and the counters G G′, substantially as described.

5. In an abacus, a counter-supporting wire, the thereon-strung counters G G′ G″, and the bushing H in and about the orifices in the counters, by and through which they are strung on the wire, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE W. BOLTON.
CHAS. H. TILLMEYER.

Witnesses:
C. T. BENEDICT,
E. R. INMAN.