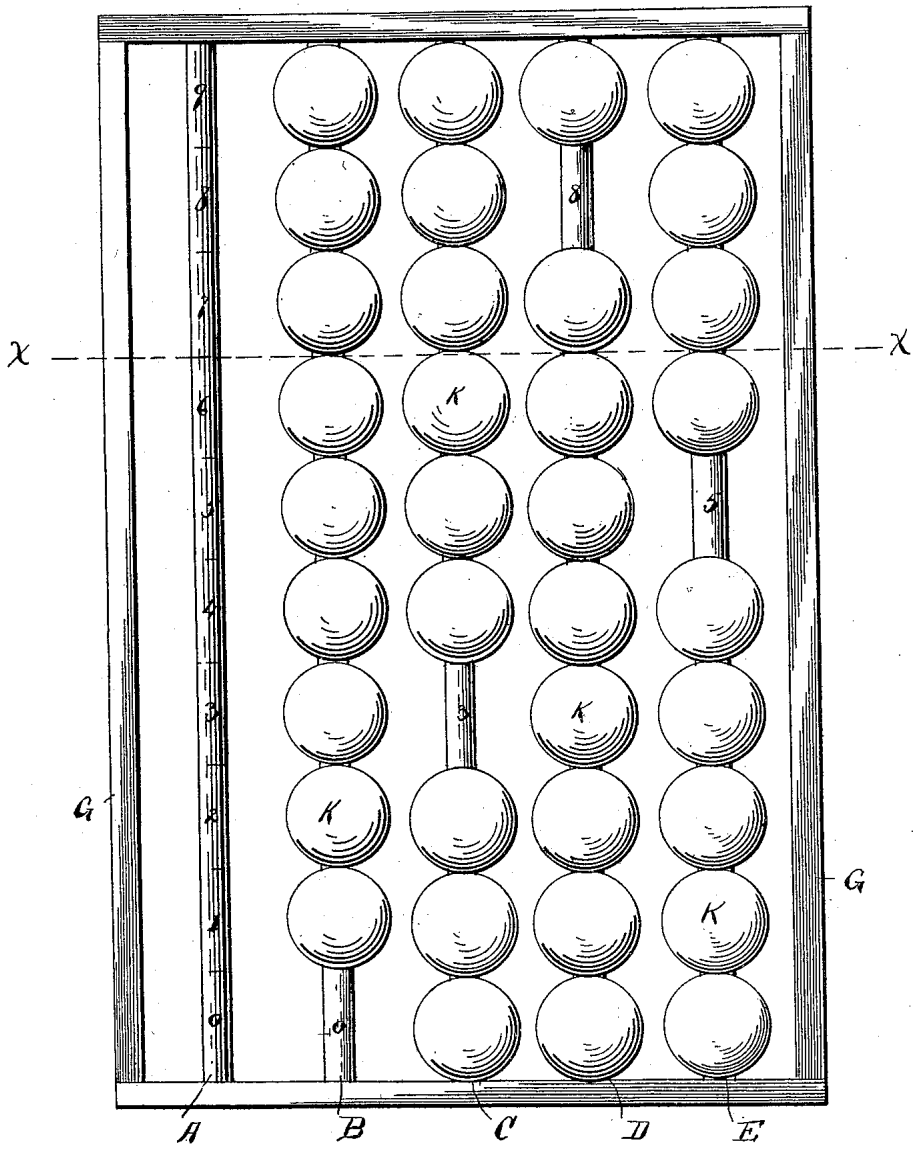
(No Model.) 2 Sheets—Sheet 1.

O. W. ANDERSON.

ADDING MACHINE.

No. 465,811. Patented Dec. 22, 1891.

Fig. 1.



WITNESSES:

C. C. Duffy

H. E. Peck.

INVENTOR

Olof W. Anderson

BY D. C. Duffy

ATTORNEY.

(No Model.) 2 Sheets—Sheet 2.

O. W. ANDERSON.

ADDING MACHINE.

No. 465,811. Patented Dec. 22, 1891.

Fig. 2.

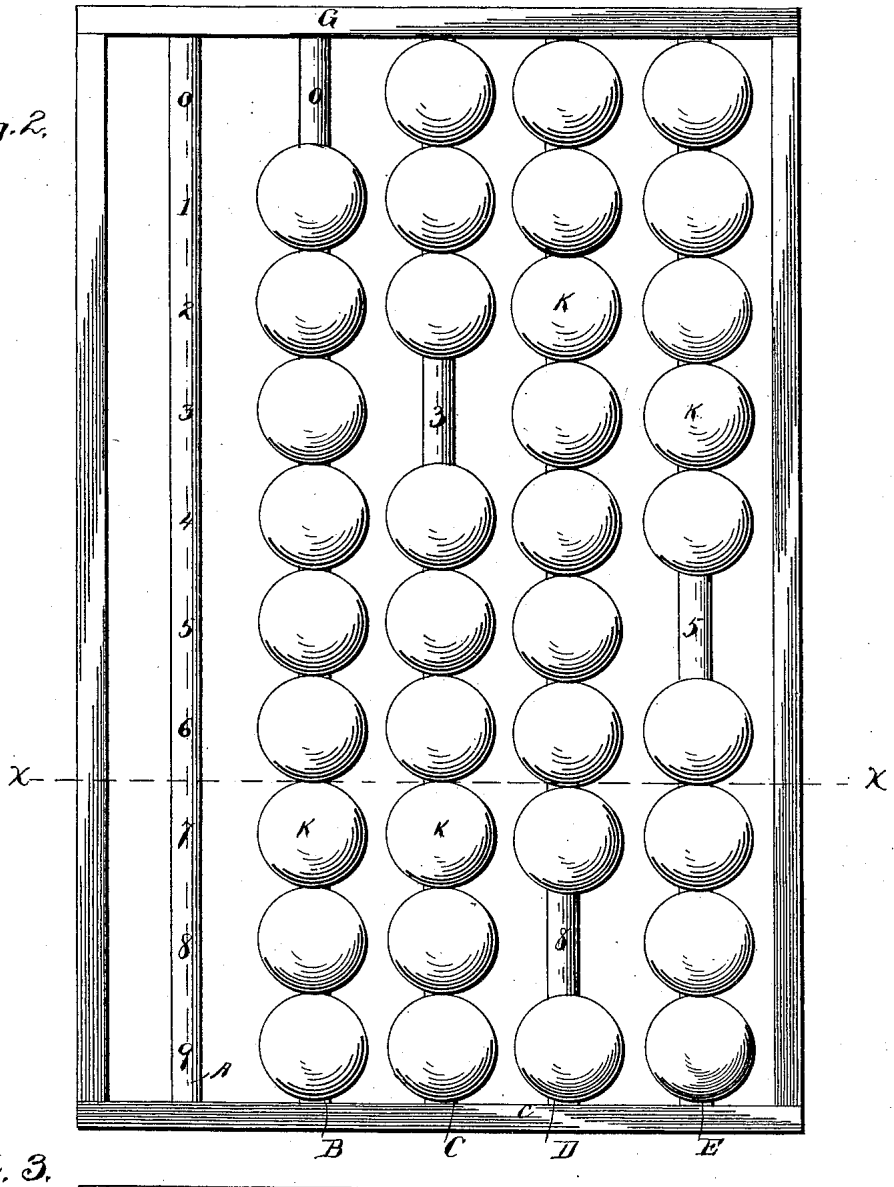
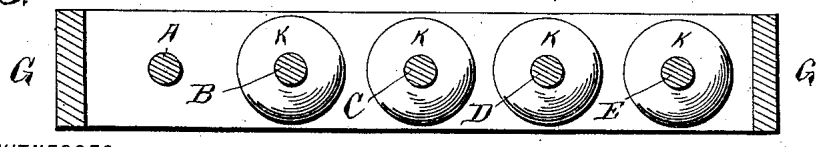


Fig. 3.



WITNESSES:

E. C. Duffy

Chas. H. Merle'

INVENTOR

Olof W. Anderson

BY O. E. Duffy

ATTORNEY.

UNITED STATES PATENT OFFICE.

OLOF W. ANDERSON, OF MOORHEAD, MINNESOTA, ASSIGNOR OF ONE-HALF TO AUGUST G. ANDERSON, OF SAME PLACE.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 465,811, dated December 22, 1891.

Application filed May 13, 1891. Serial No. 392,644. (No model.)

To all whom it may concern:

Be it known that I, OLOF W. ANDERSON, a citizen of the United States, residing at Moorhead, in the county of Clay and State of Minnesota, have invented certain new and useful Improvements in Adding-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in adding or calculating machines.

The object of my invention is to provide an exceedingly simple device by means of which numbers may be rapidly and accurately added or subtracted in a mechanical manner requiring little mental process. These objects are accomplished by and this invention consists in certain novel features of construction and in combination of parts, more fully described hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and on which like reference-letters indicate corresponding parts, Figure 1 represents a front elevation of my machine as arranged for adding, having the buttons removed from the left-hand bar, exposing the numbers on same. Fig. 2 represents the reverse side as arranged for subtracting, having the buttons removed from the left-hand bar, exposing the numbers on same as in the former case, and Fig. 3 is a cross-section on the line *x x*, Figs. 1 and 2.

The letters A, B, C, D, and E indicate a series of parallel bars of wood or other material. Each bar is numbered from 0 to 9 on the two sides, as shown in Figs. 1 and 2, and is attached to frame G at both ends. Upon each of these bars nine sliding buttons are confined. The buttons are of such a length that nine of them will preferably cover nine-tenths of the bar between the sides of the frame.

The machine is operated as follows: If you wish to add, place the machine as shown in Fig. 1. The bar then at your right would indicate the unit-column, the next one to the left the tens-column, the third one to the left the hundreds-column, and so forth. The machine, as illustrated, shows the result 385. Should we wish to add three to this amount, move three buttons on the unit-column toward you, and the portion of the bar then exposed will show the figure 8. The total result would then be 388. To this result should we wish to add nine, move one of the buttons on the unit-column away from you, exposing the figure 7, and move one toward you on the tens-column, exposing the figure 9. The total result would then be 397, and so on. For subtracting I turn the machine bottom side up, as illustrated in Fig. 2, and proceed the same as adding. For division and multiplication this machine is equally effective; but I believe it is unnecessary to especially point out the manner in which it is used for each purpose or to cite examples of calculation.

It is evident that the machine can be constructed as an adding and multiplying machine only, and that the buttons can be of any shape, made to slide in grooves with the numbers arranged in the bottom of same.

The extreme simplicity and minimum number of parts employed in this device and the many functions render it of the greatest value and utility.

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

1. The calculating device consisting in a frame, the series of ways representing unit, ten, hundred, &c., columns, each way provided with the numerals 0 to 9, and the nine movable buttons for each way, arranged, substantially as described, to cover all of the characters except one on each way, for the purposes set forth.

2. A device for the purposes mentioned, consisting of a frame provided with the series of parallel ways, the series of numbers 0 to 9 on each way, and the series of movable buttons for each way, arranged to cover all but one figure in each way, as set forth.

3. A frame having the series of ways representing columns of units, tens, hundreds, &c., each way being numbered 0 to 9, as set forth, and movable buttons for each way so arranged that any one of the numbers of each way can be displayed, as and for the purposes set forth.

4. The frame provided with the series of parallel ways, the ways being numbered 0 to 9 oppositely on their opposite sides, substan-

tially as described, and the movable buttons for each way, arranged to cover all the numbers but one on a side of each way, for the purposes set forth.

5. The frame provided with the series of parallel bars indicating columns of units, tens, hundreds, &c., each bar having two series of numbers 0 to 9, arranged oppositely, and nine movable buttons on each bar, and so arranged as to display but a single number of each series on a bar.

In testimony whereof I affix my signature in presence of two witnesses.

OLOF W. ANDERSON.

Witnesses:
JOHN H. ANDERSON,
A. ROSS.