No. 860,662. PATENTED JULY 23, 1907.

W. B. HERBERT.

ADDING MACHINE.

APPLICATION FILED MAR. 24, 1906.

2 SHEETS—SHEET 1.

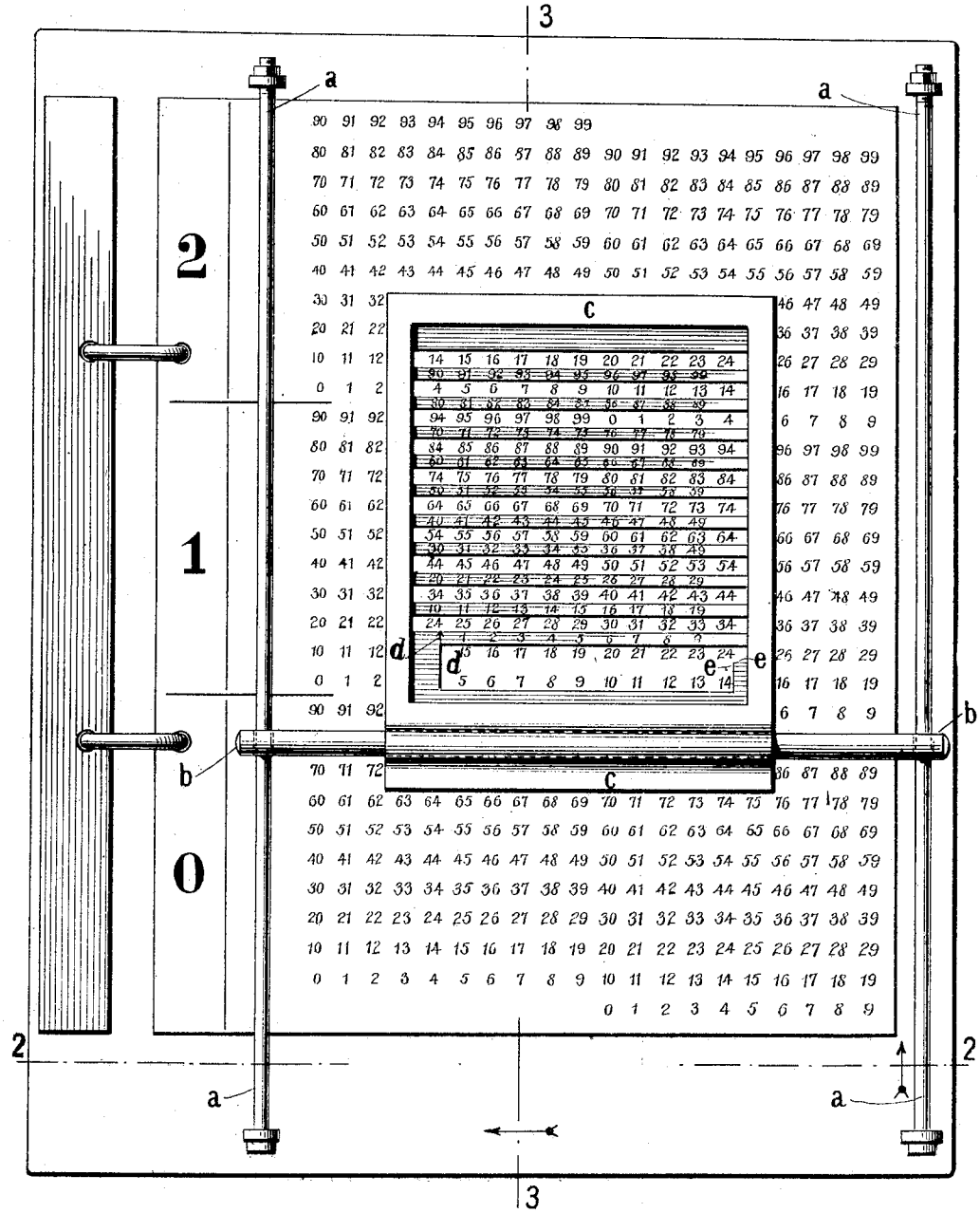


Fig. 1.

WITNESSES:

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INVENTOR

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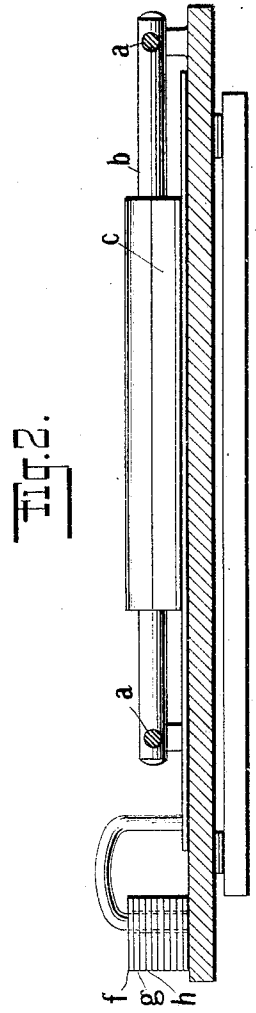


FIG. 2.

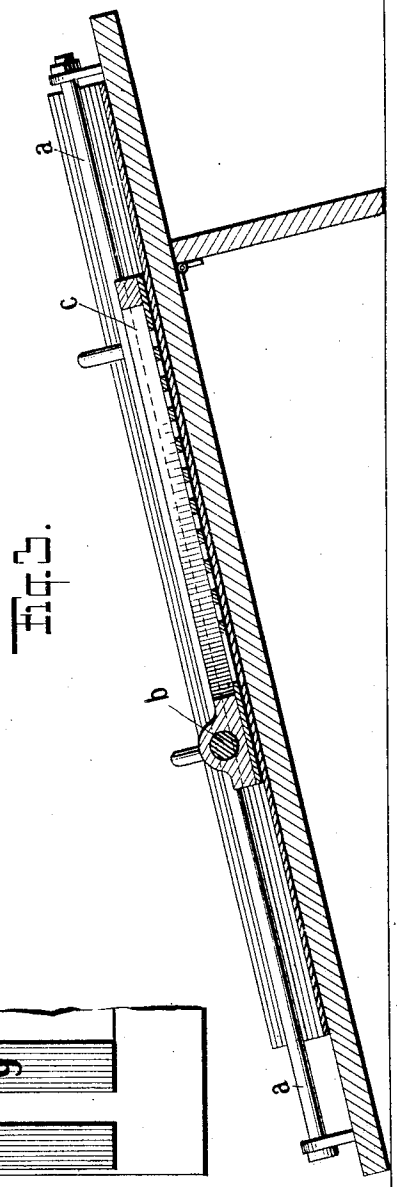


FIG. 3.

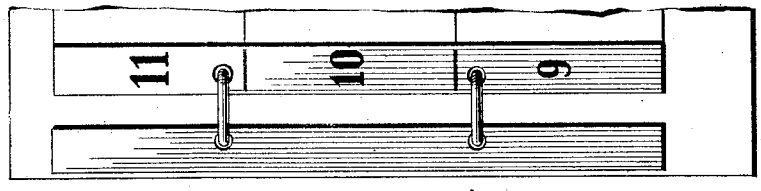


FIG. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM B. HERBERT, OF WEST NUTLEY, NEW JERSEY.

ADDING-MACHINE.

No. 860,662. Specification of Letters Patent. Patented July 23, 1907.

Application filed March 24, 1906. Serial No. 307,904.

To all whom it may concern:

Be it known that I, WILLIAM B. HERBERT, a subject of the King of Great Britain, residing at West Nutley, county of Sussex, State of New Jersey, have invented certain new and useful Improvements in Adding-Machines, of which the following is a specification.

This invention comprises an adding apparatus of a new type, wherein a base is provided with series of numbers, coöperating with which and movable over it is a counter with a similar series of numbers, the sum of each adding operation being determined by the position of the counter upon the base and indicated by the figures upon the base.

In the accompanying drawings: Figure 1 is a plan view showing an apparatus having three sections: Fig. 2, a section on the line 2, 2, of Fig. 1: Fig. 3, a section on the line 3, 3, of Fig. 1: and Fig. 4, a detail plan view of the left hand side of the apparatus.

The drawing shows a base with a plurality of groups of numbers. The groups to the right, at bottom of Fig. 1, contains in its bottom line ten numbers, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, above which in the next row are the numbers 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and so on, there being ten rows numbering up to 99; and each row contains, as shown, ten numbers. The opposite group at the bottom of the base, reference now being made to the left hand group, is a duplicate in arrangement and numbers of the first mentioned group except that the bottom row in the left hand group containing the numbers, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, is in line with the row in the other group containing the numbers 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and consequently the upper row in the left hand group terminate with the number 99 and the lower row of numbers of the next right hand group is in line therewith and contains the numbers, 1, 2, 3, 4, 5, 6, 7, 8, 9. The three pairs of groups of numbers indicated in Fig. 1 are marked with hundreds numerals, 0, 1, 2. The series of pairs of groups may, however, be continued indefinitely. At the sides of the array of numbers upon the base are parallel guide bars *a*, *a*, upon which may be moved up and down a counter comprising a bar *b*, having apertures in which the guide rods *a* fit; and, mounted to slide laterally upon the bar *b*, is a rectangular frame *c* having eleven parallel transverse slots leaving ten transverse slats upon which are inscribed rows of numbers the same as in the groups upon the base, *i. e.* the bottom row contains the numbers 0 to 9 inclusive and the top row, the numbers 90 to 99 inclusive. This counter may be moved up and down and laterally over the base and therefore has what may be termed universal movement with reference to the base. There are two index marks *d*, *e*, near the bottom of the counter. The index point *d* at the left coöperates with the numbers on the base in the groups to the left, and that *e* with the numbers in the groups to the right.

The operation of addition is as follows: assume, for instance, that the numbers 12, 15, 16, 18, are to be added. The index point *e* is brought under the number 12 in the bottom right hand group of numbers upon the base. The number 15 upon one of the slats of the counter will have above it, but on the base and read through the slot, the number 27 showing that the sum of 12 and 15 is 27. The index point *d* is now moved to a position beneath the base number 27 and the number 16 is found upon one of the slats of the counter above which appears the base number 43. The index point *e* is now moved so as to be under the number 43; the next number 18 to be added is now located upon the slat of the counter and above it is readable the base number 61 showing that the sum of 43 and 18 is 61. This operation is continued and so long as the base numbers read through the slots of the counter are in the two bottom groups of numbers opposite which is the hundreds indicator 0 the sum will be 99 or less. When the base numbers read are in the second pair of groups of numbers opposite what is the hundreds numeral 1, then one-hundred is added to the readings afforded by the base numerals. In this way, addition up to 199 may be made in these first two groups of figures and up to 299 in the next upper groups of numerals indicated by the hundreds numeral 2. The same scheme may be continued, as stated, indefinitely but to restrict the apparatus to convenient size, I provide a series of hundreds numeral strips *f*, *g*, *h*, etc. which contain the hundreds indicators or numerals 3, 4, 5; 6, 7, 8, 9, 10, 11, etc; and these may be folded over to expose their numerals as the sums of the additions reached requires.

I claim as my invention:

1. In an adding apparatus, a plurality of separate but like series of numbers 0 to 99 inclusive, the numbers of each series being arranged in rows and in consecutive order and the numbers of the several rows in columns, the whole forming a base, combined with a counter capable of universal movement over it.

2. In an adding apparatus, a plurality of series of numbers from 0 to 99 inclusive, the numbers of each series being arranged in rows and in consecutive order and the numbers of the several rows in columns, the whole forming a base combined with a counter capable of universal movement over the base and carrying a like series of numbers arranged in like rows with openings between the rows through which the base numbers may be observed, the operation being substantially as described.

3. In an adding apparatus, a base provided with a plurality of series of numbers, combined with a counter

capable of universal movement over the base, and having a like series of numbers thereon and so coöperating with those of the base that the sum of two numbers is shown by a number on the base immediately opposite the last number added, as appearing on the counter.

4. In an adding apparatus, a base provided with a plurality of series of numbers, combined with a counter capable of universal movement over the base, and having a like series of numbers thereon and so coöperating with those of the base that the sum of two numbers is shown by a number on the base immediately opposite the last number added, as appearing on the counter, and in combination therewith one or more indicators attached to the base, numbered from 0 upward, indicating the hundreds of each addition, as above described.

In testimony whereof, I have hereunto subscribed my name.

WILLIAM B. HERBERT.

Witnesses:
EDWARD C. DAVIDSON.
L. F. BROWNING.