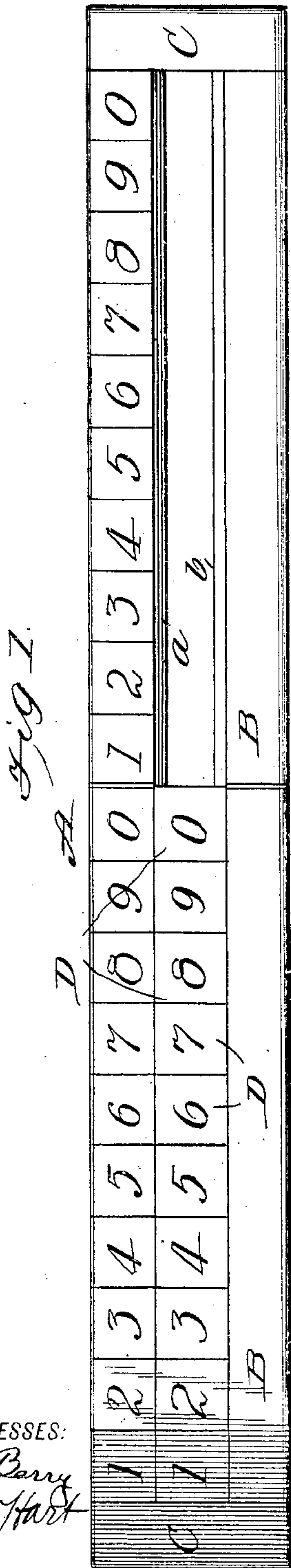


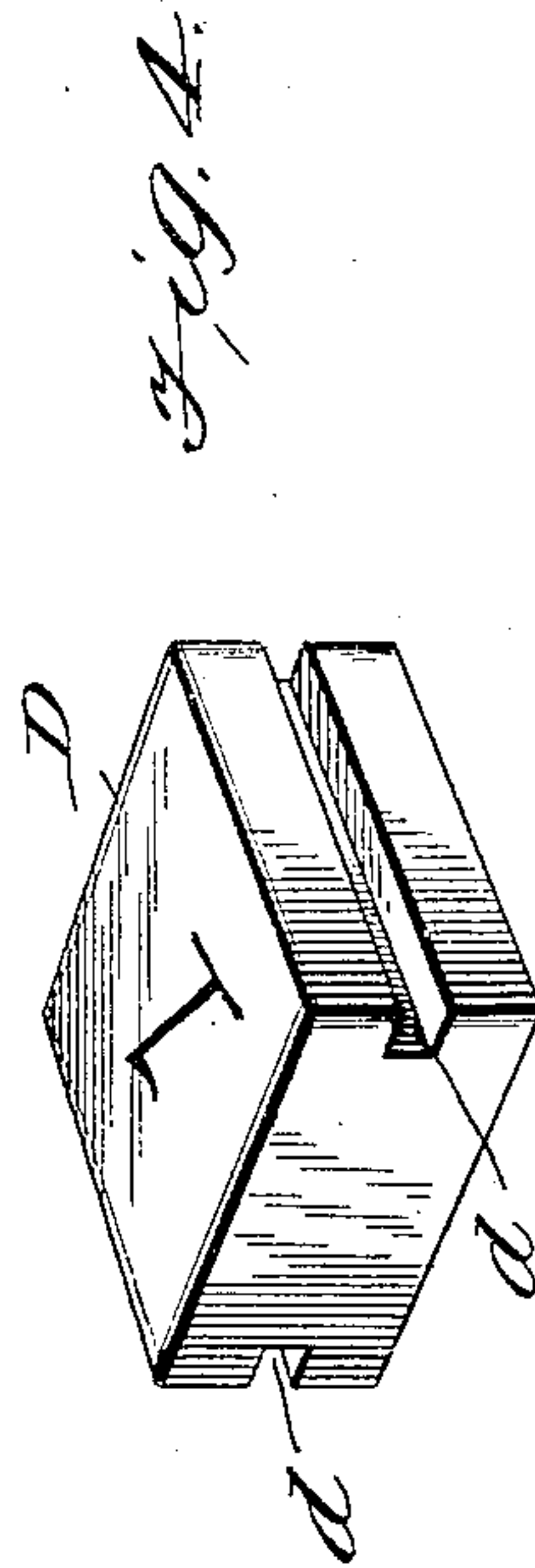
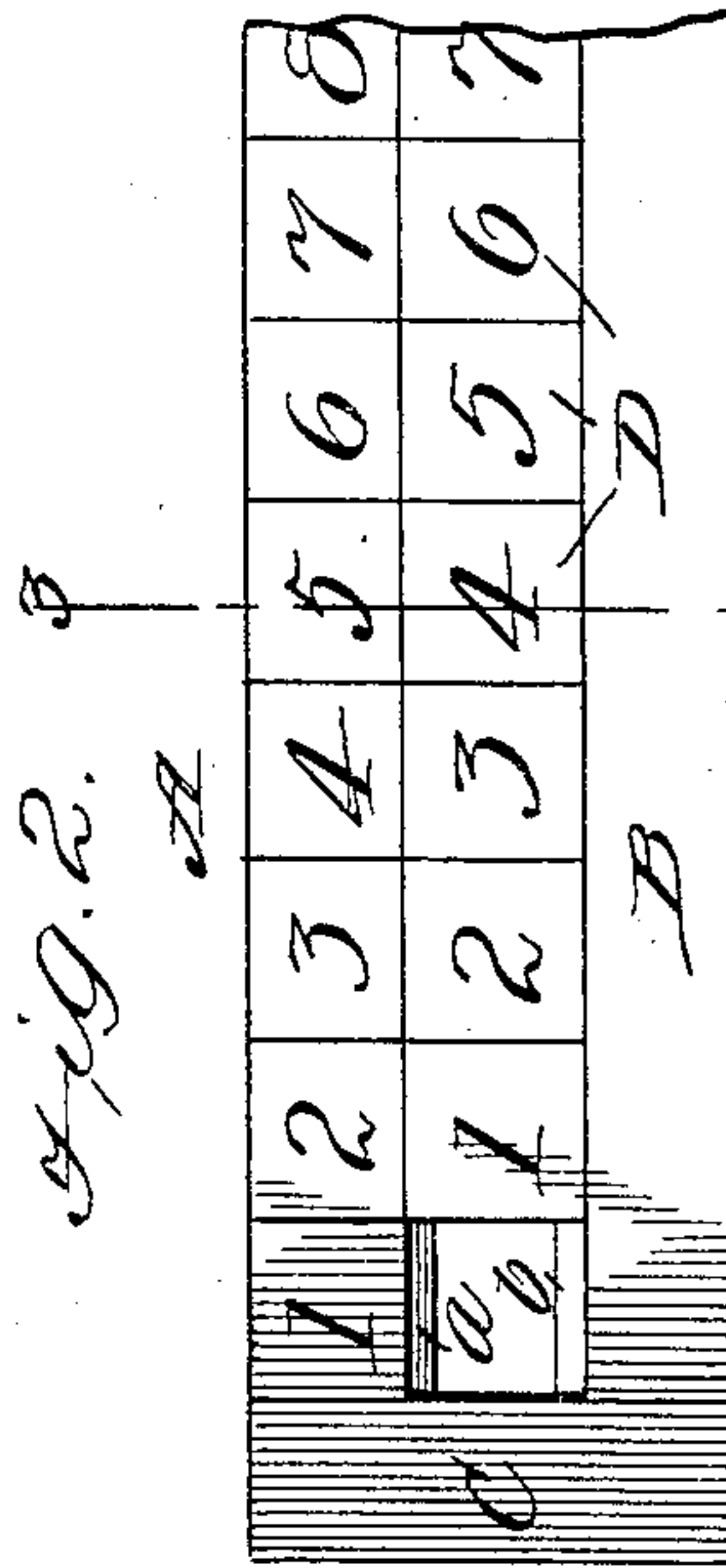
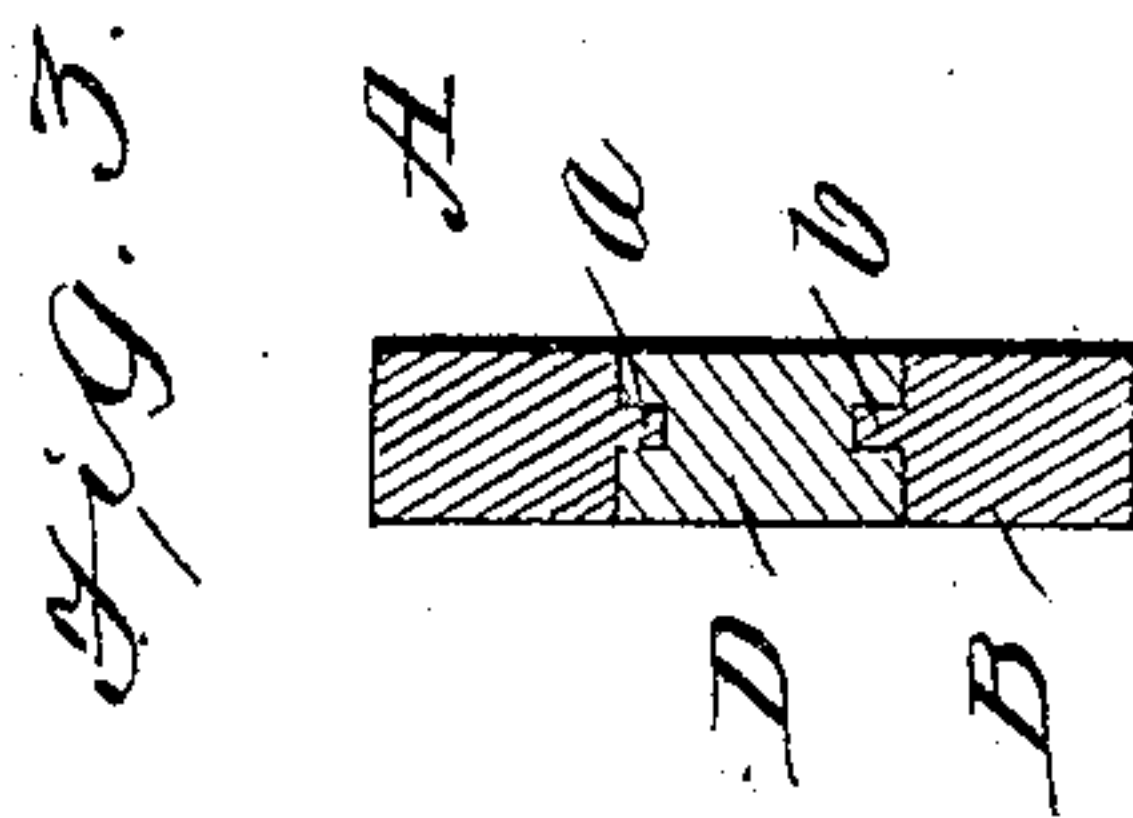
J. W. ALEXANDER.
 ADDING APPARATUS.
 APPLICATION FILED MAY 11, 1910.

973,905.

Patented Oct. 25, 1910.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN W. ALEXANDER, OF SPARTANBURG, SOUTH CAROLINA.

ADDING APPARATUS.

973,905.

Specification of Letters Patent.

Patented Oct. 25, 1910.

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To all whom it may concern:

Be it known that I, JOHN W. ALEXANDER, a citizen of the United States, and a resident of Spartanburg, in the county of Spartanburg and State of South Carolina, have invented an Improved Adding Apparatus, of which the following is a specification.

My invention is a simple educational apparatus for instruction and practice of children in adding numerals although it may be used for practice in subtraction, multiplication, and division.

The construction and manner of using the same are as hereinafter described, and illustrated in the accompanying drawing in which—

Figure 1 is a face or plan view of the apparatus. Fig. 2 is a face or plan view of a portion, showing a different adjustment of the movable blocks bearing numerals. Fig. 3 is a cross section on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of one of the movable blocks.

The rigid frame of the apparatus is elongated and formed of two parallel upper and lower bars A and B, which are spaced apart and connected by short end bars C. The upper bar A is inscribed with two sets of digits, 1 to 0, inclusive, the same being arranged in regular numerical order; and both bars are provided interiorly with lengthwise ribs or tongues *a*, *b*, as shown in Figs. 1 and 3.

A series of rectangular blocks D, ten in number and bearing digits 1 to 0 inclusive, is arranged in the space between the bars A and B and provided with opposite grooves *d*, which are adapted to receive the tongues *a*, *b*, so that the blocks may slide freely thereon from left to right or right to left. The series of blocks D is of such horizontal width that when adjusted in consecutive order, as shown in Fig. 1, they occupy the same length in the frame as one of the two sets or groups of numerals inscribed on the bar A. The numerals on the latter are separated from each other by transverse scores or marks, so that they may be more easily distinguished by the pupil. By placing the slidable set of blocks D directly under the

first set or group of numerals on the upper bar, as shown in Fig. 1, it gives none but even combinations; thus, 1—1, 2—2, 3—3, etc. By moving the blocks D to the right the distance of one number or block space, we have the combinations 1—2, 2—3, 3—4, etc.; and by moving still another number or space, we have 1—3, 2—4, 3—5, etc. By adjusting the movable blocks in this manner the space of one block at a time, until the whole series of blocks has been moved to the right as far as the frame permits, every combination that it is possible to form, such as 8—7, 7—8, 3—9, 9—3, etc., will have been formed. Thus, the pupil may be practiced in addition of the digits until he shall have become thoroughly familiar with the sums that may be formed by combination of any numeral in the upper groups or sets with any in the lower or movable set.

In case the pupil is less practiced or less familiar with the sum formed by the addition of any two numerals, one of such numerals may be separated from the others in the lower row and adjusted under the desired number in the upper row, and thus the pupil will quickly acquire proficiency in the required addition, until all difficulty has disappeared.

While my invention has been described for convenience as an adding apparatus, as before indicated, it is usable in the other allied operations of subtraction, multiplication, and division.

What I claim is:—

1. An adding apparatus comprising a rigid elongated frame having parallel upper and lower bars spaced apart and provided interiorly with longitudinal tongues, the upper bar being inscribed with two sets of digits in consecutive order, and a series of blocks inscribed with digits 1 to 0, inclusive, and arranged in the space between said bars and adapted to slide thereon, as shown and described.

2. An adding apparatus, comprising a frame having upper and lower bars arranged parallel and spaced apart, one of said bars being inscribed with two sets of digits, and a series of blocks inscribed with

digits and arranged between the said bars and adapted to slide thereon.

3. An adding apparatus, comprising a frame having a longitudinal bar inscribed
5 with two sets of digits in consecutive order, and a series of blocks similarly inscribed with digits and adapted to slide in a line

parallel with said bar, as shown and described.

JOHN W. ALEXANDER.

Witnesses:

LOGNA LOGAN,
J. C. ZIMMERMAN.