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C. ZAHN.

DEVICE FOR TEACHING THE FUNDAMENTAL OPERATIONS WITH NUMBERS.

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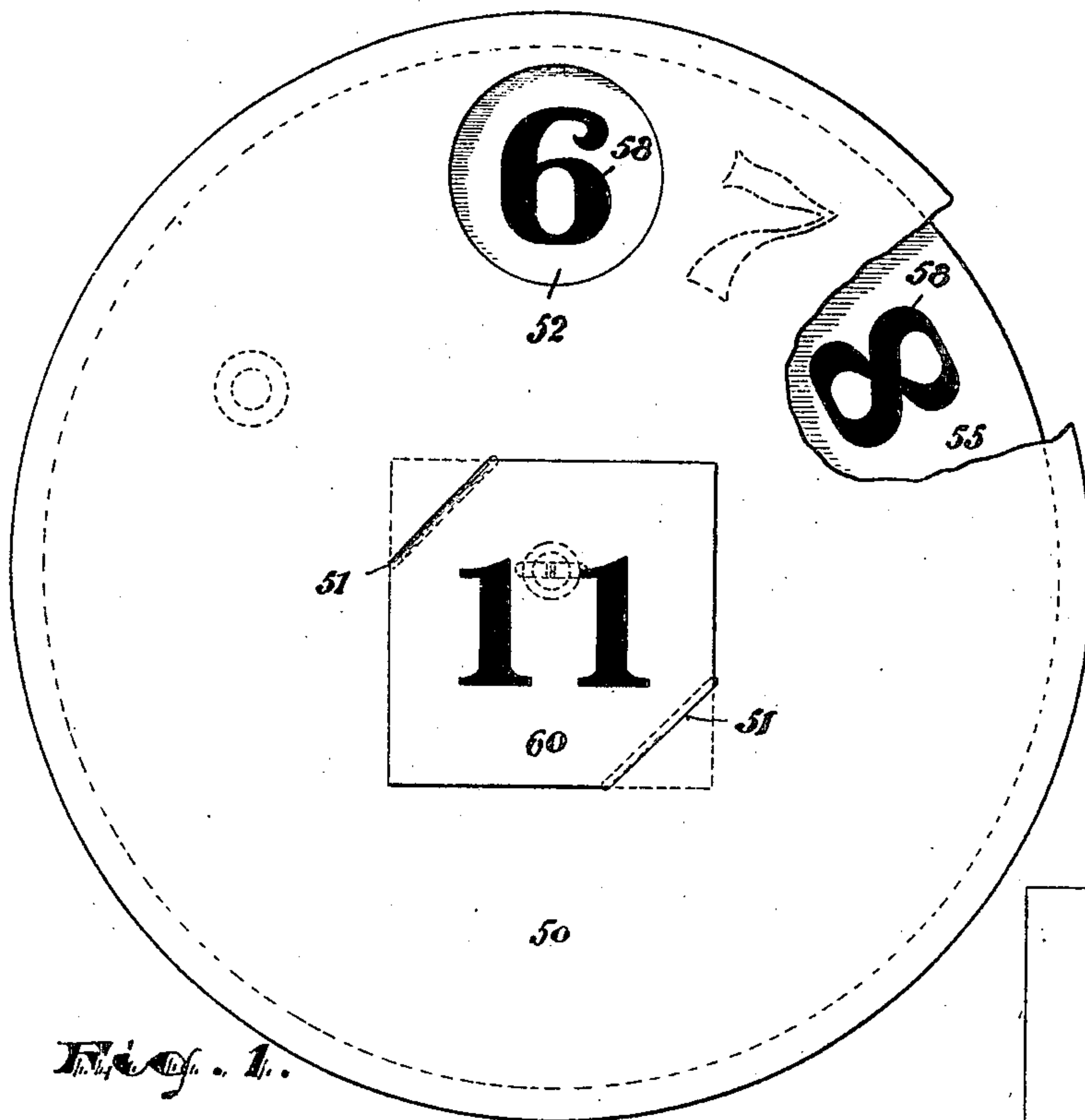


Fig. 1.

Fig. 2.

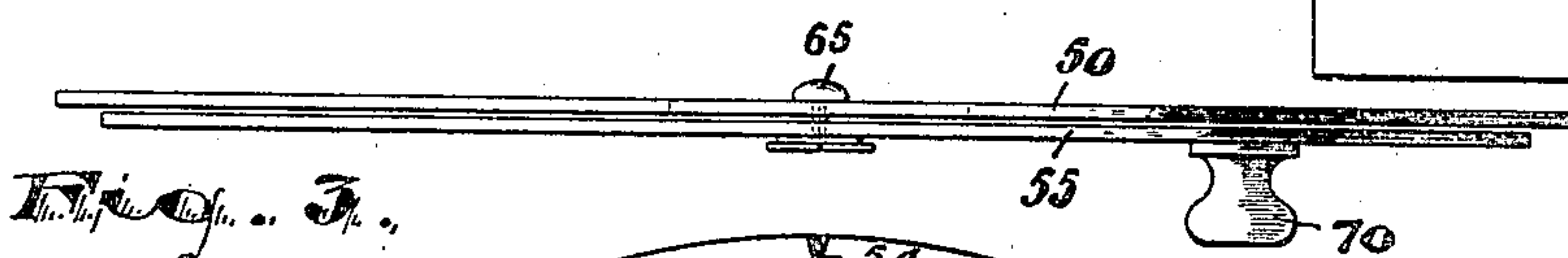
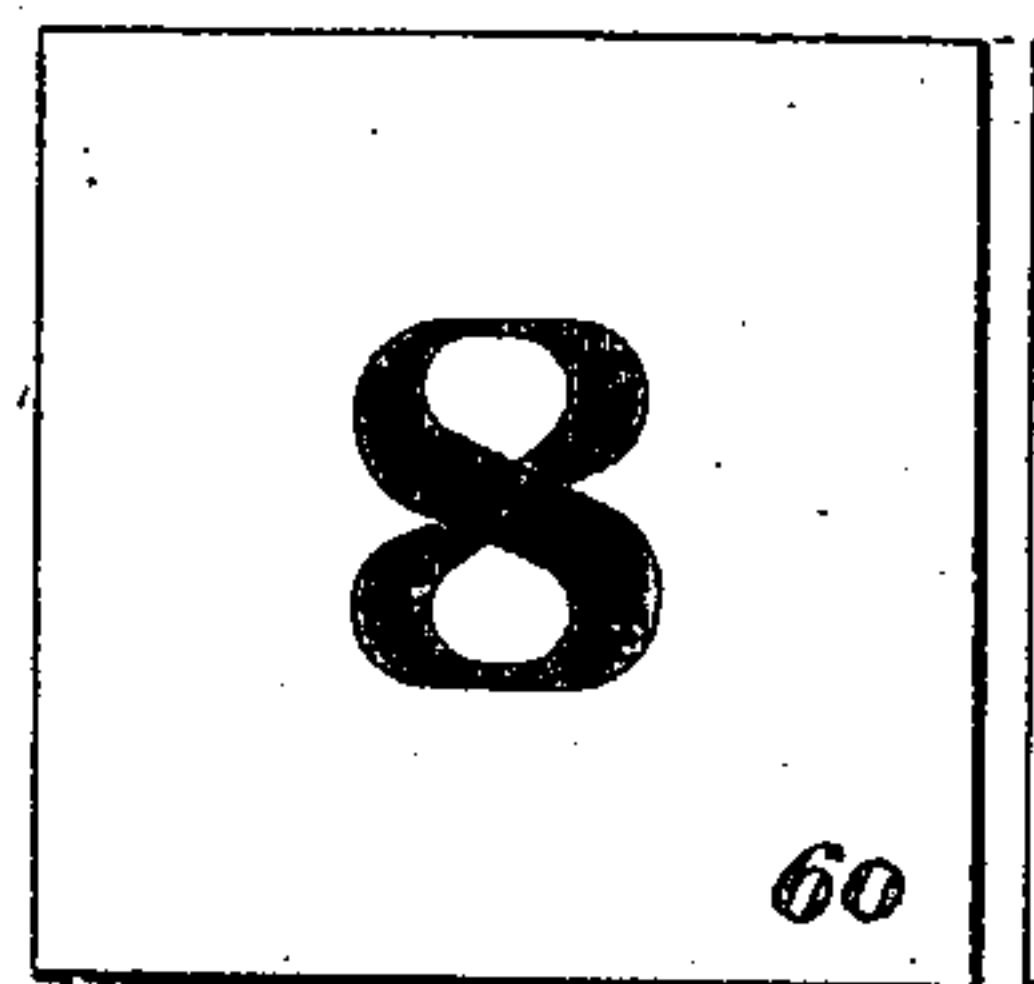


Fig. 3.

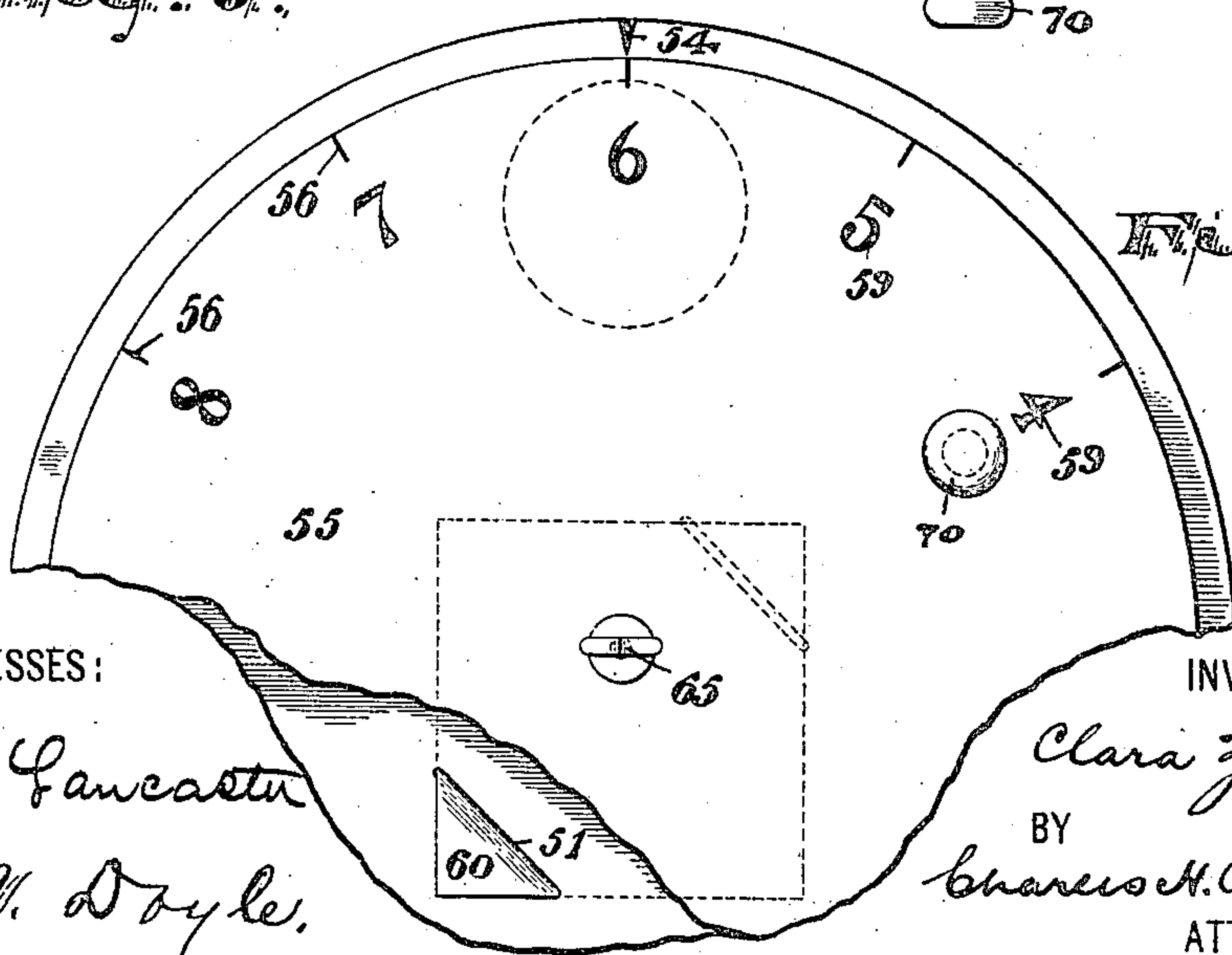


Fig. 4.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

CLARA ZAHN, OF NEWARK, NEW JERSEY.

DEVICE FOR TEACHING THE FUNDAMENTAL OPERATIONS WITH NUMBERS.

No. 816,204.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed December 5, 1905. Serial No. 290,357.

*To all whom it may concern:*

Be it known that I, CLARA ZAHN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Devices for Teaching the Fundamental Operations with Numbers; 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, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

The objects of this invention are to facilitate the work of teaching the art of addition, subtraction, multiplication, division, and partition of numbers or the fundamentals of mathematics, to familiarize the scholar with the combinations of numbers to be added, subtracted, &c., and to provide a simple, durable, and effective device for the purpose of teaching and one convenient for the teacher, to enable the teacher to know from the back of the card or device the combinations of numbers appearing at the front thereof, and to obtain other advantages and results, some of which may be hereinafter referred to in connection with the description of the working parts.

The invention consists in the improved apparatus or device for teaching numbers and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a front elevation of my improved device, partly broken away. Fig. 2 is a plan and edge view of a separable digit-card. Fig. 3 is an edge view of the device, the separable digit-card being removed; and Fig. 4 is a rear elevation of a portion of the device.

In said drawings, 50 represents a front plate or disk, preferably of heavy cardboard, the said plate at points on opposite sides of its axial center being slotted or slit, as at 51, and at a point near its edge being provided with a large opening 52. Against the rear of said plate or disk is a rear plate or disk 55, which is pivotally joined to the front plate by a fas-

tener 65, the fastener permitting a free pivotal movement of the rear plate upon the front plate, or vice versa. The said rear plate is preferably smaller than the front plate to enable the same to be independently grasped and is provided with a handle 70, eccentric to its center to facilitate the turning of said rear plate. The said rear plate 55 at its front is provided, by imprinting or otherwise, with an annular series of numbers 58, sufficiently large in size to enable said numbers to be readily distinguished by the scholars from any part of the class-room. At the rear of said back or rear disk is another series of figures 59, of smaller size, but of a size sufficient to enable the teacher to easily and quickly see the same when holding the card at arm's length in front of her. The numbers on the front of the card correspond with those at the rear thereof, the numbers "6," for example, being directly opposite one another. At the back of the front disk or card is an index-mark 54, and the numbers at the rear of the rear card are likewise provided with a series of index-marks 56, which when brought into coincidence with the mark 54 will indicate to the teacher that the number corresponding therewith at the front of said rear card is exposed at the opening 52.

Within the slits or slots 51 is separably inserted the separable digit-card 60. With the device is furnished a series or collection of said digit-cards, (numbered, preferably, from one to twelve,) the cards being interchangeable, so that one can be quickly substituted in the slits for another. In practice I may supply additional cards adapted for service in teaching position, said cards being numbered " $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ," &c.

The device thus constructed in operation permits the teacher to quickly change the combinations. "11," for example, being disclosed on the separable card 60, the teacher quickly turns the rear disk so that "6" is disclosed, then "8" or any of the other numbers printed at the front, the class promptly reciting the answer to the example thus propounded, so that each scholar becomes familiar with the combinations and the answers thereto. Should the device be used to teach addition, the numbers disclosed at the front of the device will simply be added. Should subtraction be taught, the lower number will serve as the subtrahend and the upper number as the minuend.



Having thus described the invention, what I claim as new is—

1. The improved teaching apparatus herein described, comprising a front plate and a rear plate pivotally joined together, the front plate having a separable digit-card at the center and having an opening eccentric to said center, and the rear-plate card having a series of numbers applied to the front thereof and adapted to be brought into view at said opening, substantially as set forth.

2. The improved teaching apparatus herein described, comprising a front plate and a handled rear plate pivotally joined together, the front plate having a separable digit-card at the center and having an opening eccentric to said center, and the rear-plate card having a series of numbers applied to the front thereof and adapted to be brought into view at said opening, substantially as set forth.

3. The improved teaching apparatus herein described, comprising a slitted or slotted front plate the slits of said front plate adapted to hold a digit-card, and a rear plate pivotally joined together, the front plate having a separable digit-card at the center and having an opening eccentric to said center, and the rear-plate card having a series of numbers applied to the front thereof and adapted to be brought into view at said opening, substantially as set forth.

4. The improved teaching apparatus herein described, comprising a front plate having a separable digit-card thereon and having an opening eccentric to its center and having an index-mark adjacent to said opening at the back of the front plate and a rear card or plate having a series of numbers adapted to be brought one after another into view at said opening and at its back having a series of numbered index-marks adapted to be brought into coincidence with the index-mark at the rear of the front plate substantially as set forth.

5. The improved teaching apparatus, comprising a front plate and a rear plate pivotally fastened together, the front plate having an opening eccentric to the pivotal connection and slits or slots at opposite sides of the pivotal connection, and the rear plate having numbers on both sides thereof, corresponding numbers being in position directly opposite one another, and also having a handle, and a digit-card separably inserted in said slits or slots.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of November, 1905.

CLARA ZAHN.

Witnesses:

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M. V. DOYLE.