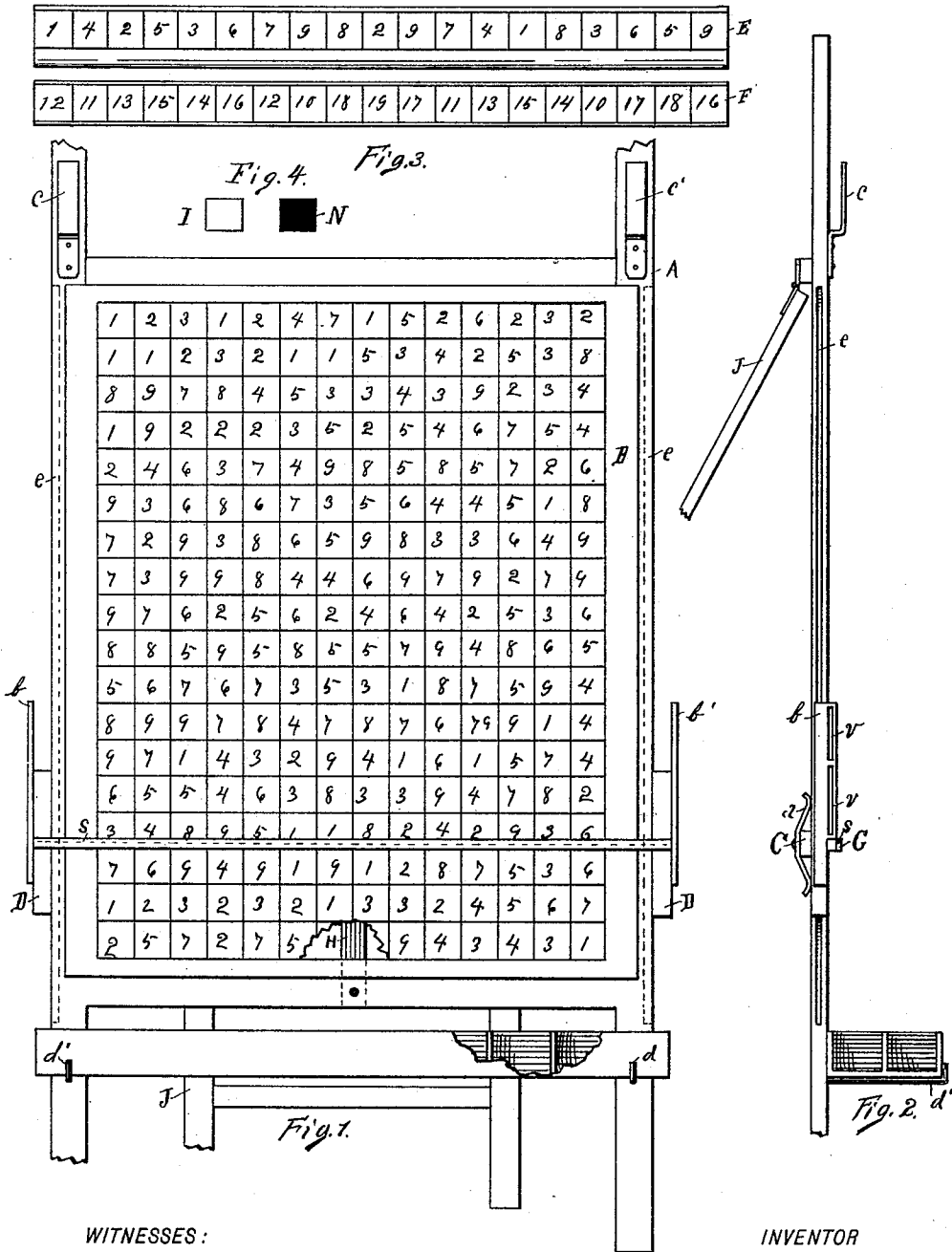


(No Model.)

J. F. EVERT.
ADJUSTABLE NUMBER DEVICE.

No. 480,841.

Patented Aug. 16, 1892.



UNITED STATES PATENT OFFICE.

JOHN F. EVERT, OF MENDON, MICHIGAN.

ADJUSTABLE-NUMBER DEVICE.

SPECIFICATION forming part of Letters Patent No. 480,841, dated August 16, 1892.

Application filed January 27, 1892. Serial No. 419,387. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. EVERT, a citizen of the United States, residing at Mendon, in the county of St. Joseph and State of Michigan, have invented a new and useful Arithmetical Apparatus, of which the following is a specification.

My invention relates to that class of apparatuses in which are employed a fixed chart bearing a series of combinations of numbers arranged in rows and a series of detached numbers to be adjustably arranged in different relations.

The object of the invention consists in the below described and claimed improvements, designed to afford a more ready, attractive, and practical means for drill in teaching pupils in primary grades and more especially in addition and subtraction.

Some of the general uses and results may be named as follows: In addition, the order of the forty-five combinations from one plus one to nine plus nine can be easily and quickly changed and the actual results of computing be shown, and also the addition of columns of figures from two to eighteen in a column can be rapidly accomplished and the results shown. In subtraction, the order in which the numbers to be subtracted occur can be changed, as desired, from one minus one to eighteen minus nine, inclusive. This is simply illustrative, as it will appear obvious that any desired combination of figures can be employed.

In the drawings forming a part of this specification, Figure 1 is a front elevation; Fig. 2, a side view of Fig. 1, looking from a point at the left; Fig. 3, a view of adjustable slides bearing figures detached from the chart; and Fig. 4 is a view of checks to be employed in showing results.

Referring to the lettered parts of the drawings, A is a frame, preferably made in something of the form of an easel and provided with an adjustable back brace J, hinged to the upper part of the frame A. The frame, however, may thus resemble an easel or may be made in any suitable form. Attached to the front face of this frame A is a chart B, bearing a series of rows of figures. These figures as they occur on the chart may be used

for class-drill; but it is frequently desirable to change the order of numbers to be added or subtracted. To accomplish this, I employ slides E and F, Fig. 3, bearing figures, which slides are adjustably used in the desired relations to the rows of figures on the chart.

At the sides of the frame A and having vertical sliding bearings in the grooves *e* are blocks D D, which blocks are connected together by horizontal bars C G, Figs. 1 and 2, one on the front side and one on the back side of the frame. The blocks D are provided with plates or brackets *b'* and *b*, which brackets are slotted, as at *v*, for the reception of the slides E F, the wide slots being for the wide slides E and the narrow slots for the narrow slides F. The horizontal bar C is provided with a spring *a*, the ends of which spring rest against a central upright bar H of the frame A, so as to allow the device which bears the slides (which device for convenience we will term a "carriage") to be moved up and down on the frame and be held at any desired position to which it is adjusted.

To the upper end of the frame A are attached rests *c* and *c'* for holding the slides E F when not in use. These slides bear figures, as shown in the drawings, but of course slides may be employed bearing any desired figures. The slide E is designed for drill in addition principally, but may be used for drill in subtraction when the numbers below are less than the ones above. Slide F is intended to be used for subtraction. To illustrate: Adjust the carriage in a certain position. Then place slide E in the lower slots and use the row of numbers on the slide E and the next row on the chart B for drill in addition, using a number on the slide and a number over it on the chart for an example. By moving the slide to the right or left the order of the combinations for different examples may be changed. By removing slide E and placing slide F in the upper slots the order of the numbers from which to subtract may be changed in a similar manner. By moving the carriage up and down a similar process may be repeated in connection with each row of figures on the chart. The pupil will readily understand by pointing to the numbers to be added and subtracted and calling for the results.

The ingenuity of the teacher and pupils will suggest different ways of using the apparatus in drill in numbers.

At the lower side of the apparatus in Fig. 1 is shown a box having different compartments, supported by brackets *d'* and *d*. The compartments in this box contain a series of cardboards or checks bearing different result-numbers—for instance, from one to eighteen, this being the possible sums of the digits when taken two and two from one plus one to nine plus nine. Several of each kind of checks are placed in the compartments of the box. The bar *G* on the front side of the chart has a groove *s*, (shown by the dotted line,) in which are placed the checks or pieces of cardboard to show the results obtained.

In Fig. 4, *I* represents one of the numbered checks, and *N* a similar check having a slated surface. These slated checks are to be used for recording results with a crayon in the addition of long columns of figures when the result exceeds eighteen. These slated checks *N* are placed in the groove *s* of the bar *G* in like manner as are the checks *I*, above described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

30 1. The combination of a chart bearing numbers, the vertically-adjustable carriage comprising a transverse bar in front of said chart,

said bar having adjustable bearings on the sides of the chart-frame and slotted plates at its ends and a longitudinal groove in the upper side of said bar, slides bearing numbers and adapted to be inserted in the end slotted plates of said bar, and a series of individual checks for bearing numbers and to be placed in the groove of the bar of the carriage to show results, substantially as set forth. 40

2. The combination of a chart bearing numbers, a vertically-adjustable carriage comprising a transverse bar having adjustable bearings on the sides of the chart-frame and slotted plates at the ends of said bar, and slides bearing numbers and adapted to be adjustably inserted in said slots, substantially as set forth. 45

3. The combination of a frame bearing a figured chart, the transverse bars in front and back of the chart, blocks having sliding bearings on the sides of the chart-frame and attached to the ends of said bars, slotted plates attached to said blocks, slides adapted to be adjustably inserted in said slots, and a spring on the back bar for holding the transverse bars in different vertical positions, substantially as set forth. 55

JOHN F. EVERT.

Witnesses:

CHAS. S. MICHENER,
LOUIS G. CLAPP.