E. E. EASTON.

CALCULATING DEVICE.

APPLICATION FILED JUNE 21, 1920.

1,425,244. Patented Aug. 8, 1922.

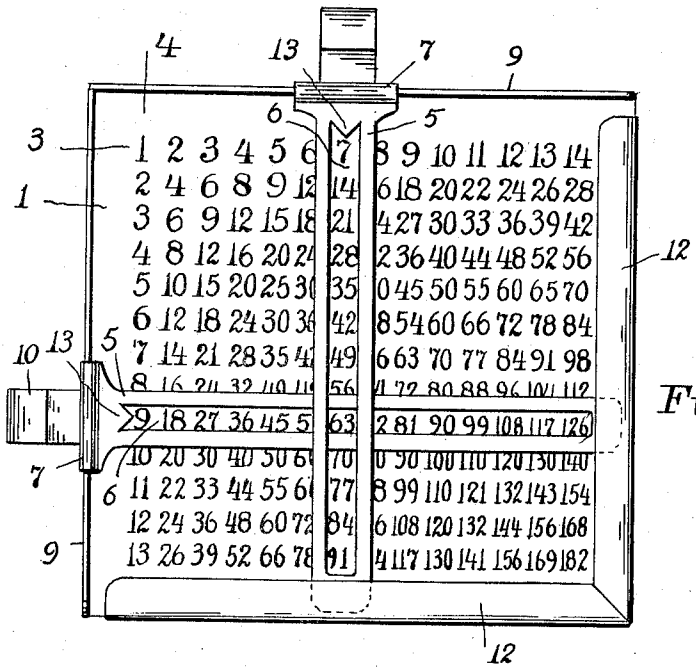


Fig.1

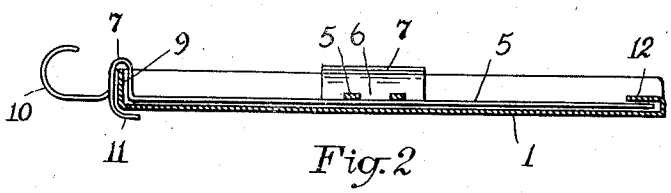


Fig.2

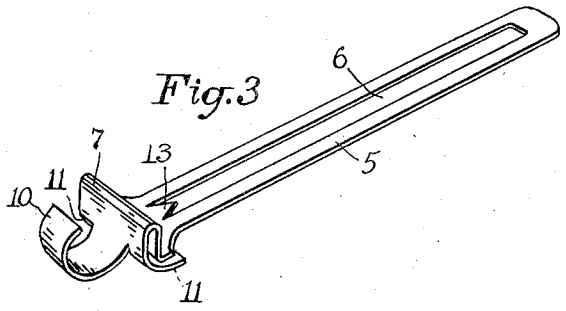


Fig.3

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UNITED STATES PATENT OFFICE.

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CALCULATING DEVICE.

1,425,244. Specification of Letters Patent. Patented Aug. 8, 1922.

Application filed June 21, 1920. Serial No. 390,308.

To all whom it may concern:

Be it known that I, ELMER E. EASTON, a citizen of the United States, and a resident of Brockton, in the county of Plymouth and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Calculating Devices, of which the following is a full, clear, and exact specification.

This invention has for its object the construction of a simplified, convenient and efficient means whereby to multiply any of one series of numerals to any one of another series, and my invention consists of the arrangement and construction of parts hereinafter set forth, and illustrated in the drawings accompanying the same, in which Fig. 1 is a plan view of a calculator embodying my improvements. Fig. 2 is a cross section thereof. Fig. 3 is a perspective view of one of the two movable members or indicators composing a part of the invention.

The calculator comprises a rectangular plate or board 1 preferably of sheet metal bearing upon its face numerous rows of numerals. Near one margin of the plate 1 and parallel therewith is a row of numerically disposed numbers from one on up, and near the margin at right angles to the other is a similar row of numerals having its "1" common with the "1" of the first row. One of these rows, that designated by the reference numeral 3, may be a series of multipliers, and the other row 4 may be considered a series of multiplicands. At the intersection of a line extended from any number in one row and running parallel with the other row, with a line from any number in the other row, is imprinted a number equal to the product of the multiplication of such two numbers. Hence, by looking at the intersecting lines from any two numbers in the rows 3 and 4, the product of the multiplication of such numbers is instantly seen.

For accurately and quickly determining such intersections, I provide two indicators each preferably formed from sheet metal and consisting of a blade 5 having a longitudinally extended slot 6, and a head 7 bent to enclose a flange 9 with which the plate 1 is provided, as shown in Fig. 2. Although shown in Fig. 2 as loosely fitting its flange 9, each head 7 should fit the same snugly enough to hold the blade 5 at right angles thereto, while permitting the latter to be easily slid along the flange.

The loop or thumb piece 10, bent out from each head 7, is the operating member thereof. A finger 11 curved downward and inward from each side of the head holds the latter from rising out of engagement with its flange 9, and the opposite end of each blade 5 is kept down upon the plate 1 by means of a lip 12 bent over substantially parallel with the plate. At the end of each slot 6 adjacent the row of numerals to be multiplied is a pointer 13 the better to aid in the designation of the numbers sought.

In using this calculator, the blades 5 are slid along upon the plate 1 until each presents its pointer 13 to one of the numbers to be multiplied, and within the small square space at the junction of the two slots 6 will be seen the product. As illustrated, the two pointers are resting at the numerals 9 and 7 respectively, and at the intersection of the slots 6 is seen the answer "63"

In the manufacture of these calculators, I prefer to lithograph the numbers thereon before the flanges and lips are bent into form, and to make the numbers small enough and the plate large enough to accommodate a considerable range of calculation. The blades are applied to the plate before the fingers 11 are bent beneath the same.

Thus produced and arranged, these calculators are comparatively inexpensive, do not get out of order, occupy but little space, since the flanges 9 and heads 7 do not need to be as high as illustrated, and are accurate and convenient in use.

What I claim is:

A calculator comprising a plate bearing thereon sets of figures having a mathematical relationship in rows at right angles to each other, two edges of said plate at right angles to each other being bent up at right angles to the plate, and the opposite edges of the plate being bent over parallel with the plate to form lips, and two indicator blades crossing each other at right angles, each being composed of sheet metal bent to form a head enclosing one of said bent up edges, an actuating thumb piece, and fingers bent beneath the edge of the plate for holding the head on said bent up edge, the end of the blade opposite its head being beneath one of said lips.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 16th day of June, 1920.

ELMER ELSWORTH EASTON.