Sept. 9, 1924. 1,507,907

A. B. COSAD

CALCULATOR FOR PENCILS

Filed Aug. 23, 1923

FIG. 1

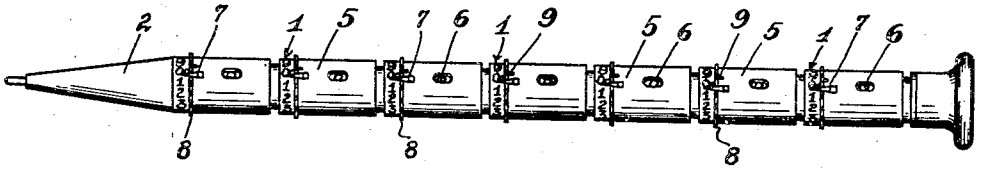


FIG. 2

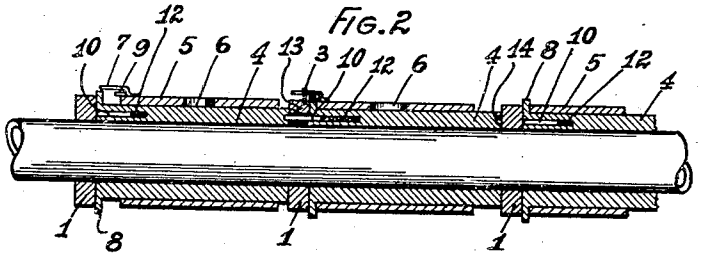


FIG. 3

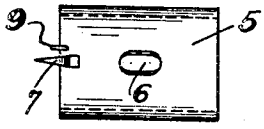


FIG. 4

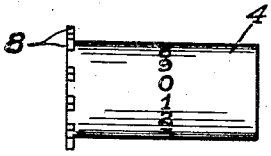


FIG. 5

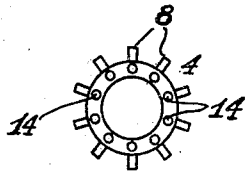


FIG. 6

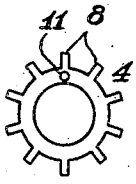


FIG. 7

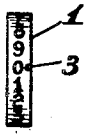
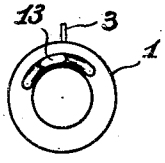


FIG. 8



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UNITED STATES PATENT OFFICE.

ALBERT B. COSAD, OF OAKLAND, CALIFORNIA.

CALCULATOR FOR PENCILS.

Application filed August 23, 1923. Serial No. 658,922.

To all whom it may concern:

Be it known that I, ALBERT B. COSAD, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Calculators for Pencils, of which the following is a specification.

My invention is an improved calculator. The object of my invention is to provide a calculator which may be readily mounted upon a pencil or similar article.

My invention further provides certain novel features and combination of parts which will be further described in the following detailed description.

Referring to the annexed drawing in which my invention is illustrated:

Figure 1 is a side elevation of my calculator.

Figure 2 is a fragmentary longitudinal sectional view of the same.

Figure 3 is a plan view of the outer sleeve.

Figure 4 is a plan view of the inner sleeve.

Figure 5 is an end view of the inner sleeve.

Figure 6 is the other end view of the inner sleeve.

Figure 7 is a side elevation of the stationary ring.

Figure 8 is an end view of the same.

Referring more particularly to the drawing: a plurality of stationary rings 1 are placed at equal intervals on the pencil 2. On the perifery of the rings 1 are printed a series of numbers from 0 to 9 in regular sequence. A stop pin 3 projects from these rings, and is positioned next to the numeral "0".

Inner sleeves 4 are rotatably mounted on the pencil 2 between each pair of rings 1. A series of numbers from 0 to 9 are printed on the perifery of the sleeves 4 at about the centers thereof, and these series increase in the same direction as those on the rings 1.

Outer sleeves 5 are rotatably mounted on the sleeves 4, and are shorter than the inner sleeves so that they can be moved longitudinally of the pencil 2, between the rings 1. A hole 6 is formed in each of the sleeves 5 through which the numbers on the sleeves 4 are visible. An indicator finger 7 is formed on one end of each of the sleeves 5 in alignment with the hole 6, and extends over the ring 1,—the purpose of this ring will be described further.

A plurality of teeth 8 are formed on one end of the sleeves 4, each tooth being in alignment with a figure as printed on the perifery of said sleeves. A finger 9 is formed on one end of each of the sleeves 5 and is adapted to engage the teeth 8 to rotate the sleeve 4.

For each turn of one of the sleeves 4 the next sleeve to the left must be rotated one tenth of a turn. To accomplish this a pin 10 is set in a bore 11 in the end of the sleeve 4 and against a spring 12. This pin reaches through a slot 13 in the ring 1 and enters one of the depressions 14 in the adjacent end of the sleeve 4 to the left and rotates said sleeve $\frac{1}{10}$ of a turn and then is withdrawn from said depression by the inclined surface adjacent said slot. A depression 14 is placed in alignment with each numeral on the surface of the sleeve 4.

The method of operation of my invention is as follows: if it is desired to add (24) and (53) hold the pencil in the position shown in Fig. 1. One of the sleeves 5 is moved to the right which disengages the finger 9 from the teeth 8. The sleeve 5 is now rotated counter clock wise until the indicator 7 points to (4) on the ring 1. The sleeve 5 is moved to the left to engage the finger 9 with the teeth 8, and the sleeve is then rotated clockwise until the indicator 7 strikes the pin 3. The sleeve 4 has been rotated with the sleeve 5 and the numeral (4) has been brought in alignment with the (0) on the ring 1. This procedure is repeated for the numeral (2) on the adjacent sleeves to the left, and (24) is now aligned with the (0) on the rings 1.

The procedure described is again repeated on the first sleeves for the numeral (3) and on the second for the numeral (5) and the answer (67) appears through the holes 6.

Having described my invention I claim:

1. A calculator comprising a rod, stationary rings secured to said rod, a series of numbers printed on said rings, inner sleeves journalled on said rod between said rings, a series of numbers printed on said sleeves, outer sleeves journalled on said first mentioned sleeves, and means to couple said outer and inner sleeves together.

2. A calculator comprising a rod, stationary rings secured to said rod, a series of numbers printed on said rings, inner sleeves journalled on said rod between said rings,

a series of numbers printed on said sleeves, outer sleeves journalled on said first mentioned sleeves, teeth on said inner sleeve, and a finger on said outer sleeve adapted to engage said teeth, whereby said sleeves are rotated together.

3. A calculator comprising a rod, stationary rings secured to said rod, a series of numbers printed on said rings, inner sleeves journalled on said rod between said rings, a series of numbers printed on said sleeves, outer sleeves journalled on said first mentioned sleeves, and means to couple said outer and inner sleeves together, a slot in said rings, a pin in the end of said inner sleeve adapted to reach through said ring and engage the adjacent inner ring to impart a partial rotation thereto.

In testimony whereof I affix my signature.

ALBERT B. COSAD.