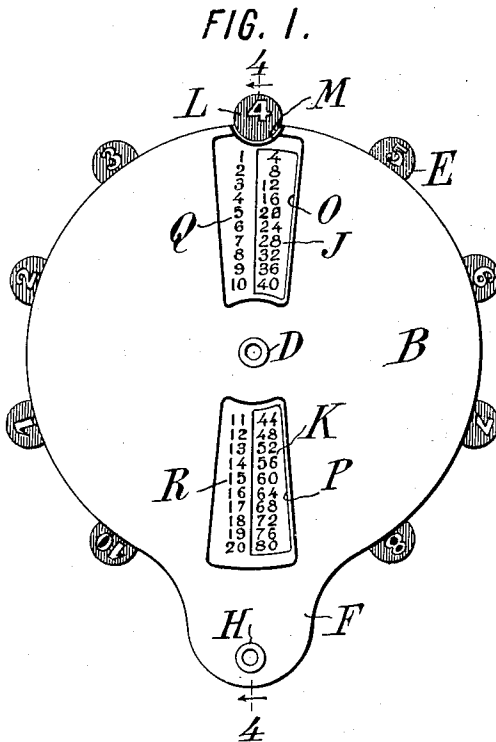
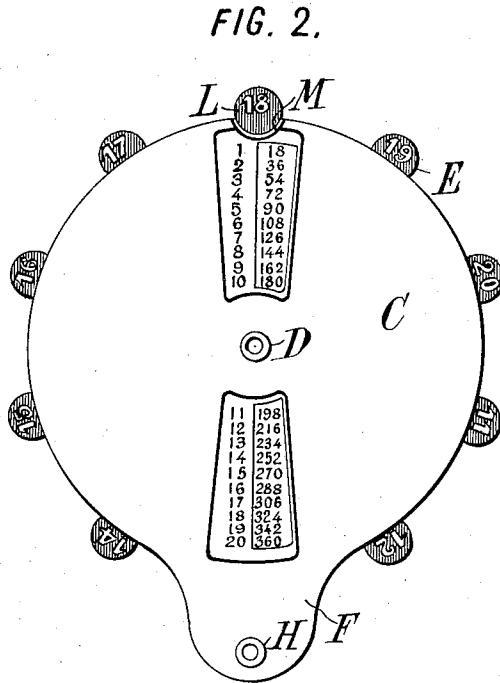
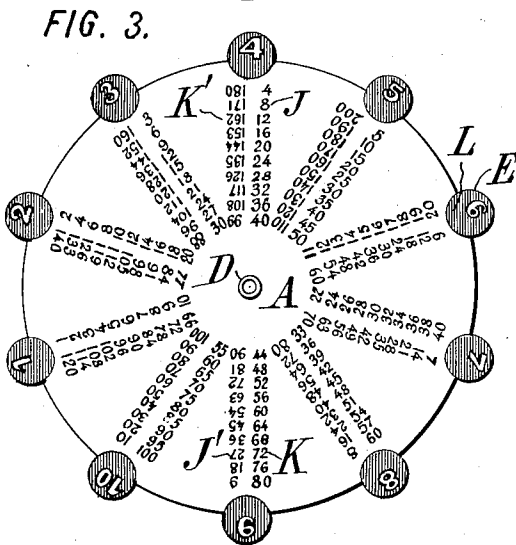
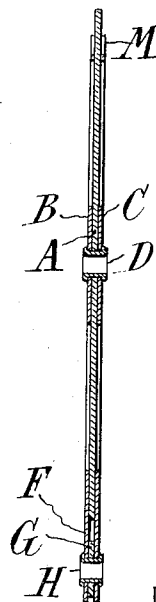


916,563.

Patented Mar. 30, 1909.
 2 SHEETS—SHEET 1.



WITNESSES:

Ired White
Rene Muine

INVENTOR :

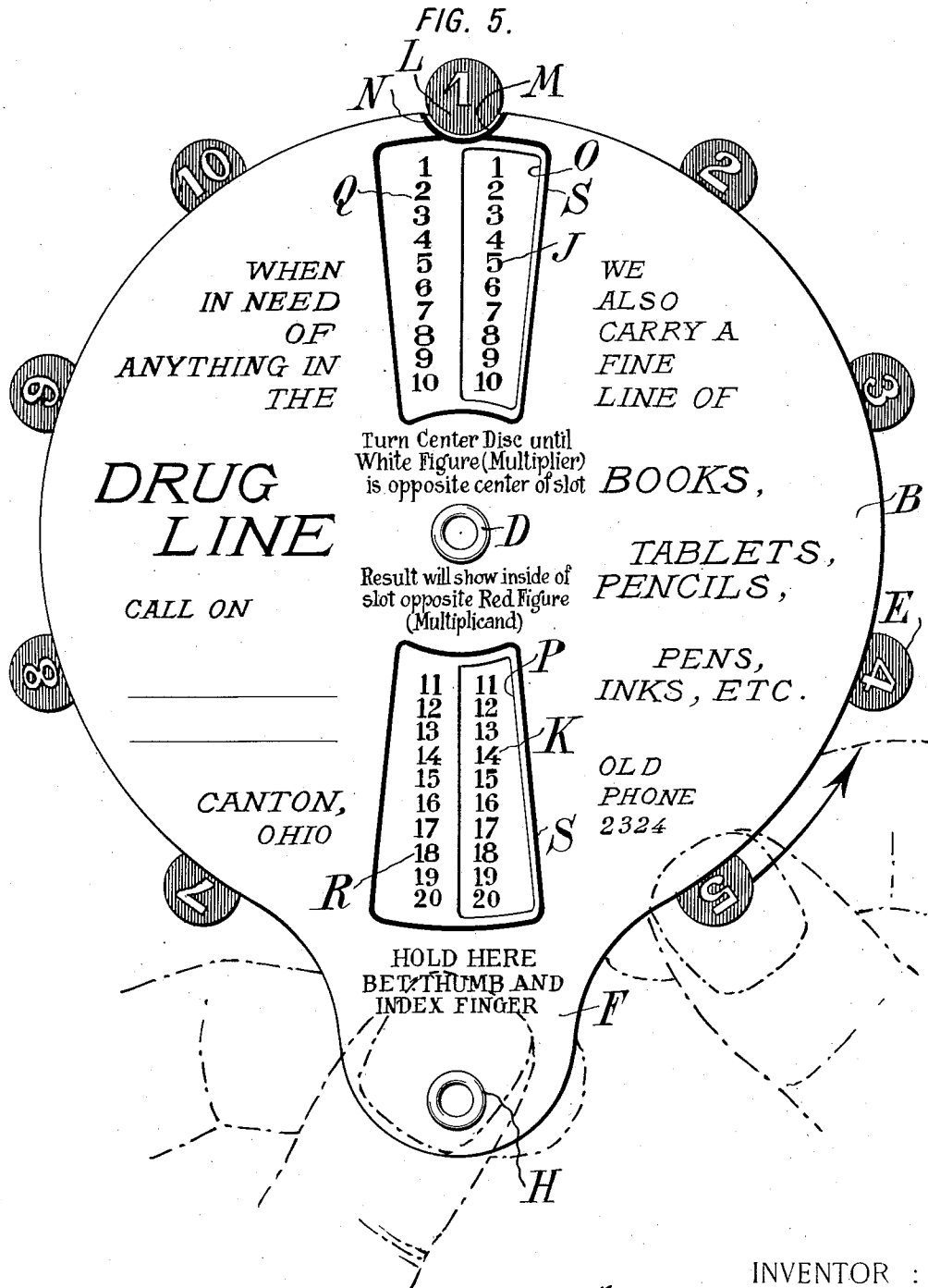
Frank J. Kristofek,

By Attorneys

Arthur E. Chase & Hanna

916,563.

Patented Mar. 30, 1909.
 2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANK J. KRISTOFEK, OF COSHOCTON, OHIO, ASSIGNOR TO THE MEEK COMPANY, OF
COSHOCTON, OHIO, A CORPORATION OF NEW JERSEY.

CALCULATOR.

No. 916,563.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed January 9, 1908. Serial No. 409,948.

To all whom it may concern:

Be it known that I, FRANK J. KRISTOFEK, a citizen of the United States, residing at Coshocton, in the county of Coshocton and State of Ohio, have invented certain new and useful Improvements in Calculators, of which the following is a specification.

This invention aims to provide a calculating device which can be cheaply made and is provided with spaces suitable for advertising matter, and which is very handy and easily used.

Various other points of advantage are referred to in detail hereinafter.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 is a plan or face view of the first side. Fig. 2 is a similar view of the reverse or second side. Fig. 3 is a plan of an intermediate disk. Fig. 4 is a section on the line 4-4 of Fig. 1. Fig. 5 is an enlarged view similar to Fig. 1, showing the printing upon the face of the device, and illustrating the manner of manipulating it.

Referring to the embodiment of the invention illustrated, and which is designed for performing the operations of multiplication and division, a central disk A is pivoted between two covers B and C by means of a flanged tubular pivot D. The covers B and C are preferably of celluloid or similar durable, smooth material, and the intermediate disk A, being protected by the two covers, may be of cardboard or the like. Arranged around the circumference of the central disk A are a number of approximately semicircular projections E extending beyond the peripheries of the covers, and forming each a sort of handle by means of which the disk may be rotated in the manner shown in Fig. 5.

At the lower side of the apparatus the two covers are extended to form tabs F, which are spaced apart by means of a spacer G, and are attached to each other by means of a rivet H. The spacer holds the tabs apart sufficiently to permit the free movement of the central disk between the covers when the tabs are held between the thumb and forefinger as in Fig. 5, no matter how strongly the device may be gripped.

The intermediate disk carries a series of numbers representing the products of the various multipliers and multiplicands. Each series of products is arranged in a column extending in a direction from the tab F up-

ward, and at the right of a line through the center; each column being divided into two half columns J and K, between which is a central blank space which is utilized as hereinafter described. Each column J K is alongside of another column J' K', the column which is in use being always upright and the adjacent column inverted. By this arrangement of products the available space is most efficiently utilized and the desired calculations are very readily performed. Each of the tabs E carries a number which in the present embodiment is the multiplier. The multiplier is distinctly and heavily marked, preferably by indicating it in white upon a black circle which extends over the projecting portion of the tab and also within the circumference of the disk. Each of the covers is provided at a point opposite the tab F with a notch M corresponding with the black disks L of the multipliers, so that the disk may be brought accurately into the desired position by bringing the multiplier which is to be used into register with the notch M. The notch is outlined distinctively, as by means of a red line N. Openings O P are provided through the covers corresponding with the half columns J and K, and at the left of each of these openings are arranged two half columns Q and R of figures constituting in the present case the multiplicands, these figures being distinctively printed upon the covers, as, for example, in red. Each of the openings through which a half column of products is visible, and the half column of multiplicands alongside of said opening, are inclosed in a distinctive frame or border S, which may be of red ink; for example.

The space at the center of the cover between the two opposite frames S is utilized to print the directions for use (on each side of the device for convenience), and the spaces below the lower frame S and extending down on to the tabs F are used to indicate the manner of holding the device. This leaves the two spaces at the sides of the frames S for advertising or other desired descriptive matter, each of which is almost a semicircle and of convenient shape and abundant space for advertising matter. The fact that the device is always held in one position insures that the advertising matter shall always be upright and easily

read. Both covers may be exactly alike so as to avoid the expense of printing two different designs. The central disk carries multipliers and columns of products on both of its opposite faces, and preferably in two series; the first face corresponding in the present case to multipliers from 1 to 10, and the reverse face carrying multipliers from 1 to 20 and corresponding products. The multiplicands preferably run from 1 to 20. Thus in a very small compass it is possible to provide an apparatus for multiplying any numbers from 1 up to 20 (both multiplier and multiplicand) and at the same time to provide a substantial space for advertising matter.

In use it is only necessary to turn the desired multiplier L to a position corresponding with the notch M. For the desired multiplicand in the column Q the product will appear at the right through the opening O or P. The device may be used similarly for division to the nearest integral result. By suitable modification of the numbers printed upon the inner disk and the covers, various other calculations might be provided for. For example, the columns of products might be replaced by columns of sums, differences, or other functions of two given numbers. The printing of one of the given numbers in white on a black ground, the other in red, and the function or result in black, facilitates the rapid use of the device; but these differences in color are not essential. Nor is it essential that a cover should be provided at each side of the disk which carries the products and multipliers.

What I claim is:—

1. A calculator including in combination a disk A and a cover B, one rotating relatively to the other, said disk having projections E carrying multipliers, the edge of

said disk between said projections being entirely covered, and said disk having distinctively marked portions L extending over said projections and within the edge of the disk, said cover having an opening O alongside of which are arranged multiplicands Q, and having a notch M in its edge adjacent to said multiplicand, and said disk carrying products J adapted, when a given multiplier is in position, to show the inner part of the marked portion L through said notch, to be visible through said opening O, and to correspond with the respective multiplicands Q alongside thereof.

2. A calculator including in combination a pair of members, one provided with distinctively marked portions L projecting partly beyond its edge and partly within its edge, and the other provided with a notch M adapted to make visible the inwardly projecting edge of the portion L.

3. A calculator including in combination a disk A and a cover B, one rotating relatively to the other, said disk having projections E carrying multipliers, the edge of said disk between said projections being entirely covered, and said disk having distinctively marked portions L extending over said projections and within the edge of the disk, said cover having a tab F at one end constituting a holder, and means opposite said tab for indicating the proper position of the cover and the disk relatively to each other.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK J. KRISTOFEK.

Witnesses:

FRANK E. POMERENE,
LORA SMITH.