

M. L. CLEARY.
CALCULATOR.

APPLICATION FILED JUNE 19, 1912.

Patented May 13, 1913.

2 SHEETS—SHEET 1.

1,061,819.

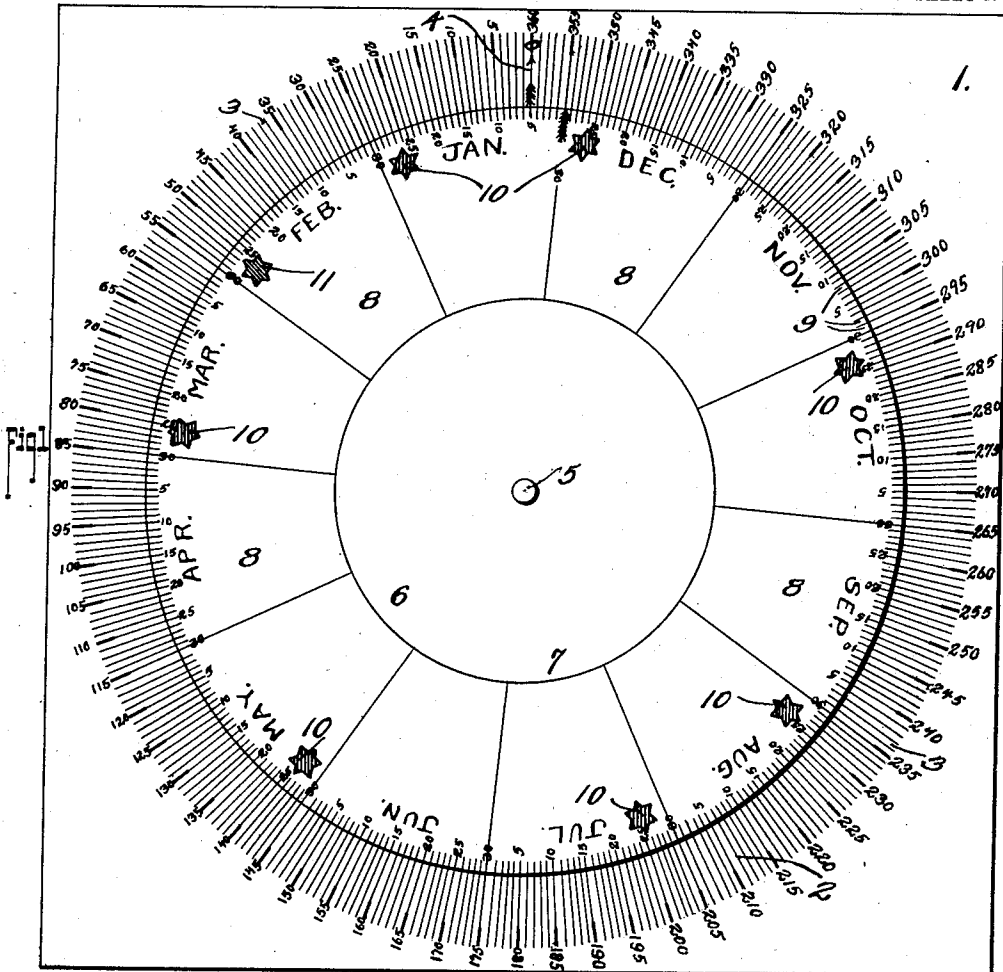
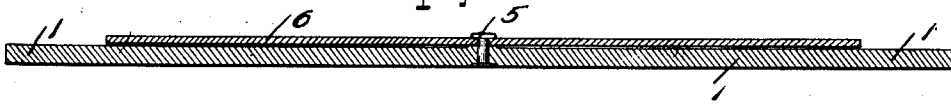


Fig. 2.



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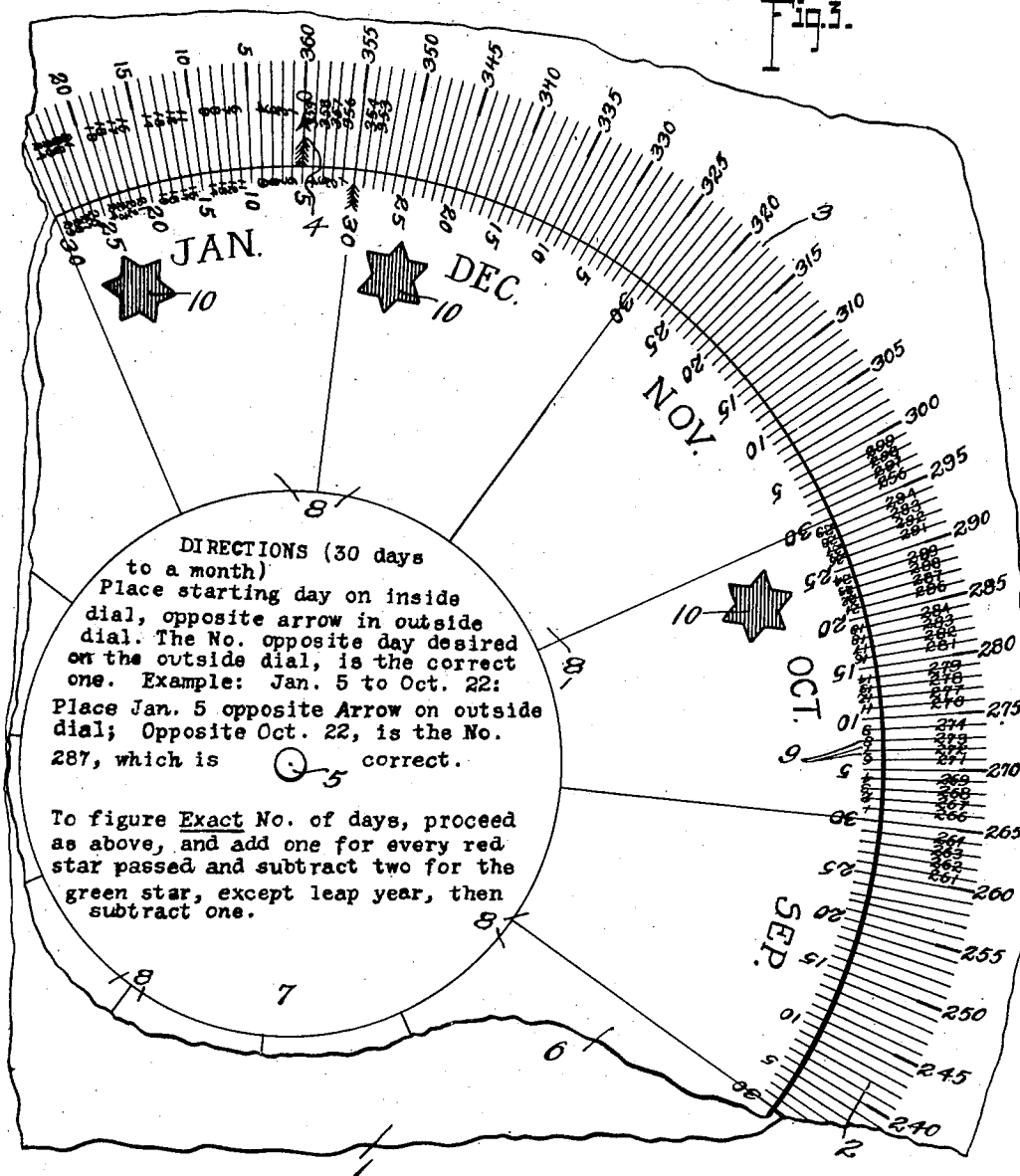
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Fig. 3.



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CALCULATOR.

1,061,819.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MAUD LOWRY CLEARY, a citizen of the United States, residing at Boise, in the county of Ada and State of Idaho, have invented certain new and useful Improvements in Calculators, of which the following is a specification.

This invention relates to calculators, and particularly to devices for ascertaining the number of days which elapse between any two dates of the different months, by a simple manipulation of the parts of the device.

The invention has for its object to provide a device of the above character, by means of which either the exact number of days which intervene between two different dates may be computed, or by which the number of days, when reckoning thirty days to the month, may be computed, as is often necessary in computing interest.

Briefly stating, the invention comprises a pair of dials, one concentric within the other and the two dials rotatable with respect to each other, one of the dials being divided into twelve sectors or spaces which represent successively the different months of the year, and each sector being divided into thirty equal subdivisions, the other dial, which in practice will be preferably stationary, being divided into 360 equal subdivisions, each one of which is numbered. Certain indicia are provided on the face of the rotatable dial to assist the operator in properly making the desired computation.

With such brief explanation of the essential parts of the invention, I will now state that an additional object of the invention is to so construct the dials and subdivide them into the proper equal parts, so that the subdivision may be easily effected, each dial having 360 subdivisions, and it being far easier to subdivide the dials into 360 equal parts than it would be to subdivide them into 365 parts. The provision of the indicia before referred to, will render the computation of the exact number of days which elapse between any two specified dates an easy matter.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawings, in which,

Figure 1 is a face or top plan view of a preferred embodiment of the invention; Fig. 2 is a vertical section through the device, and Fig. 3 is a fragmentary plan view bringing out clearly the computing indicia and directions for operating the calculator.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

Referring particularly to the drawings, the numeral 1 indicates a suitable base, which may be constructed of wood, metal, or celluloid, or other substance and which is provided with a circular dial 2, as shown. The dial 2 may be imprinted upon the face of the base 1, or it may consist of a separate plate, attached in any desired manner to the base 1. The dial 2 consists of a circular segment, which is divided into 360 equal spaces of subdivisions 3, which spaces are consecutively numbered from 0 to 360, starting from the arrow 4. Pivoted concentrically with the dial 2 at the pivot point 5, is a circular dial 6 capable of rotation with respect to the dial 2. The dial 6 is provided with a circular central space 7, which may be utilized for suitable legends or for printed matter which will explain to the operator the manner of using the device. The circular segment of the dial 6 located between the circular portion 7 and the outer periphery of the dial is divided into twelve equal sectors 8, in which the names of the twelve months of the year are successively imprinted. Each of the sectors 8, at the outer periphery thereof, is divided into thirty equal spaces or subdivisions 9, which are numbered consecutively from 1 to 30, the numbering being in the same direction as the numbering of the spaces on the dial 2. By my system of providing uniformly thirty spaces for each month, making 360 spaces for the entire year, extreme simplicity of construction of the device is obtained, since it is possible to divide the dial 6 into twelve sectors of exactly the same size, and each sector, which corresponds to a month is divided into thirty equal spaces, reducing the amount of geometrical calculation necessary for the provision of the spaces on the dials. It is to be understood, however, that

an exact computation of the number of days which elapse between any two dates cannot, by this system, be correctly arrived at without the use of certain indicia which are placed on certain of the sectors 8 which correspond to the various months, which I will now proceed to describe.

In each of the sectors 8 which correspond to a month having 31 days, I place an indicating mark of some suitable form, which in the drawings is shown in the form of a star 10; in practice the stars 10 placed in the sectors correspond to the months of January, March, May, July, August, October, and December will be colored red. It will be obvious, that in making a computation, by the manner hereinafter described, it will be necessary to add one to the number which the operator will obtain from the dial 2 for each red star passed. In the sector which corresponds to the month of February, a star or other suitable indication 11 is placed, and this star will be colored differently from the stars 10; in practice it will have a green color. As the month of February normally has two days less than the number of spaces provided for each of the sectors 8, it will be necessary to subtract two from a computation arrived at in the manner hereinafter described, should the green star be passed.

In operating the device, the procedure would be as follows: Suppose, for example, it is desired to ascertain the number of days from January 5th to October 22nd. The dial 6 is rotated until the space No. 5 of the January sector is opposite the arrow 4, which corresponds to 0 on the dial 2. With the two dials in this relative position, it will be seen that the number on the dial 2 which is opposite the space 22 of the October sector, is 287. In reckoning 30 days to a month, as is often done when computing interest, the number 287 will be the desired number, without any further corrections. To figure the exact number of days, the above procedure will be followed, subject however to the following considerations. It will be seen that between the date January 5th and October 22nd, that five red stars will be found in the sectors, there being five months included which have 31 days. Add 5 to 287, 292 is obtained, and as the green star is also passed in the period specified, two will be subtracted from the above number, leaving 290, which is the exact number of days desired, except in the case of leap year. When it is desired to compute the number of days between a date in advance of February of a leap year and a date later than the same, instead of subtracting two from the product arrived at by adding one for each red star, one will be subtracted, since February of leap year has 29 days, one less than the number of spaces provided on each sector.

From the foregoing description it will be seen that I have provided an extremely simple and convenient device, by which, with a little practice, it will be an easy matter to make a quick computation of the number of days elapsing between any two dates.

The device does not possess any parts which are liable to get out of order, and by virtue of the system which I have employed, may be constructed without difficult geometrical calculations.

Having thus described the invention, what is claimed as new is:

1. A calculator device, consisting of concentric circular dials, said dials being rotatable with respect to each other, one of said dials being divided at its periphery into 360 equal parts or subdivisions which are numbered from 0 to 360, said dial having a suitable indication at the zero mark of said subdivisions, and the other of said dials being divided into twelve equal sectors, which represent successively the months, each of said sectors being divided into 30 equal parts or subdivisions, numbered consecutively from 1 to 30 to indicate the days of the months, the said sectors which correspond to the months having 31 days being each provided with a suitable indication to indicate to the operator that one is to be added for each of said indications which occurs between two specified dates on said second named dial, and the sector which corresponds to February being provided with a suitable indication which may be distinguished from the indications on the other sectors, to indicate that one is to be subtracted when the said indication occurs between two specified dates for leap year, and that two is to be subtracted for the normal years.

2. A calculator device, consisting of a fixed circular dial, said dial being divided at its periphery into 360 equal parts or subdivisions which are numbered consecutively from 0 to 360, said dial having a suitable indication at the zero mark of said subdivisions, and a second dial concentrically disposed within said first named dial rotatable with respect thereto, said second dial being of smaller diameter than the dial first named, and being divided into 12 equal sectors, which sectors represent successively the months, each of said sectors being divided into 30 equal parts or subdivisions which are numbered consecutively from 1 to 30 to indicate the days of the month, the said sectors which correspond to the months having 31 days being each provided with a suitable colored indication to indicate to the operator that one is to be added for each of said indications which occurs between two specified dates on said second named dial, and the sector which corresponds to February being provided

with an indication having a color to contrast with that of the indications on the other sectors, in order to indicate to the operator that one is to be subtracted when
5 the said indication occurs between two specified dates for leap year, and that two is to be subtracted for the normal years.

In testimony whereof I affix my signature in presence of two witnesses.

MAUD LOWRY CLEARY.

Witnesses:

OTTO F. PETERSON,
AMY FOUCH.