(No Model.) 2 Sheets—Sheet 1.

J. L. CATHCART.

INTEREST AND TIME INDICATOR.

No. 584,670. Patented June 15, 1897.

FIG. 1.

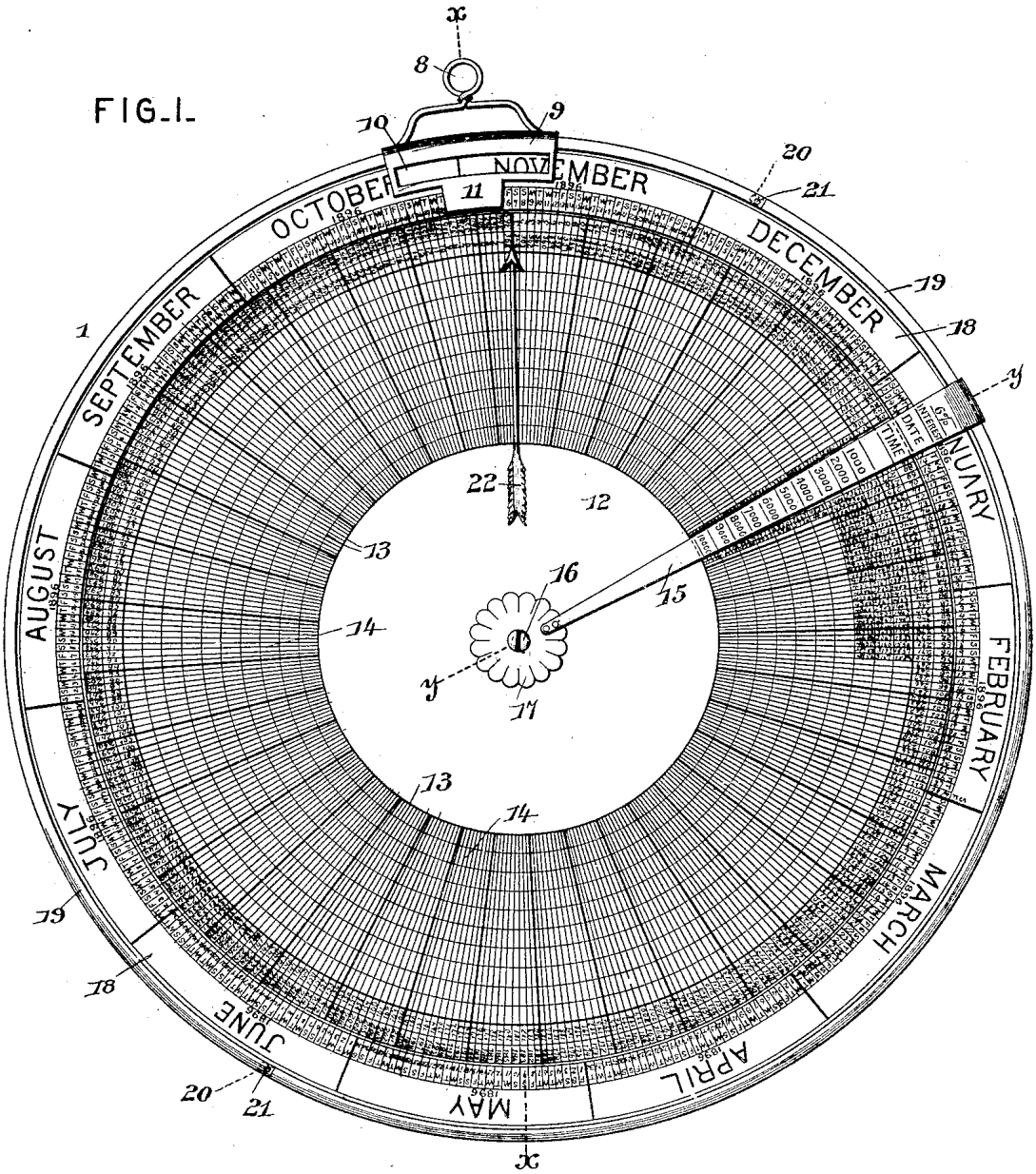
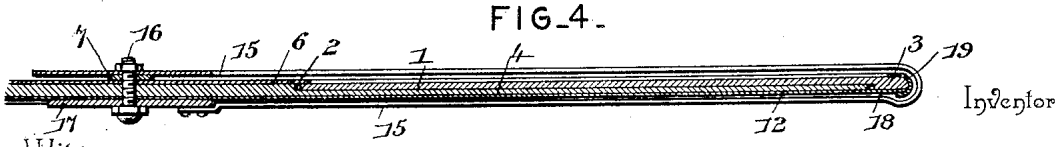


FIG. 4.



Inventor

Witnesses

Jas. K. McCathran

V. B. Hillyard.

John L. Cathcart

By his Attorneys.

C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

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FIG. 6.

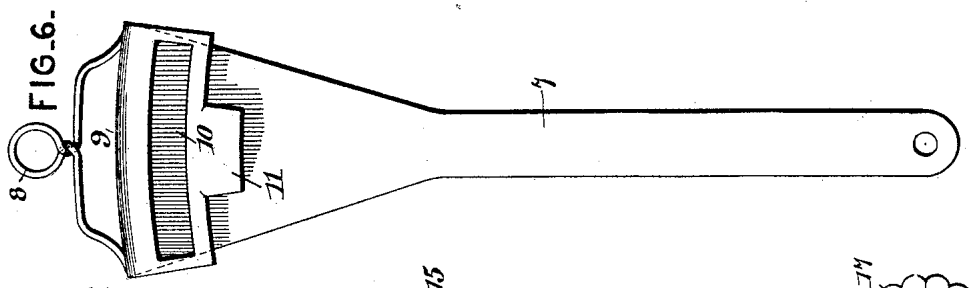


FIG. 5.

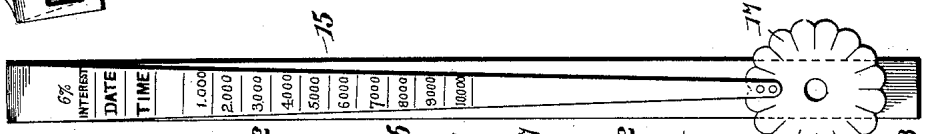


FIG. 3.

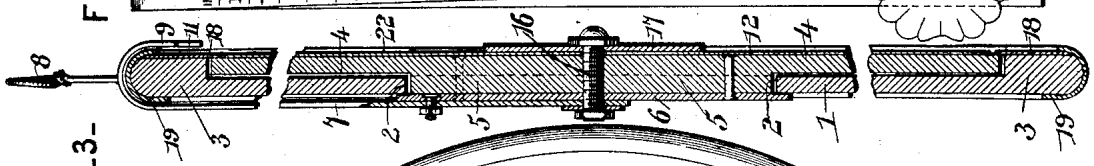
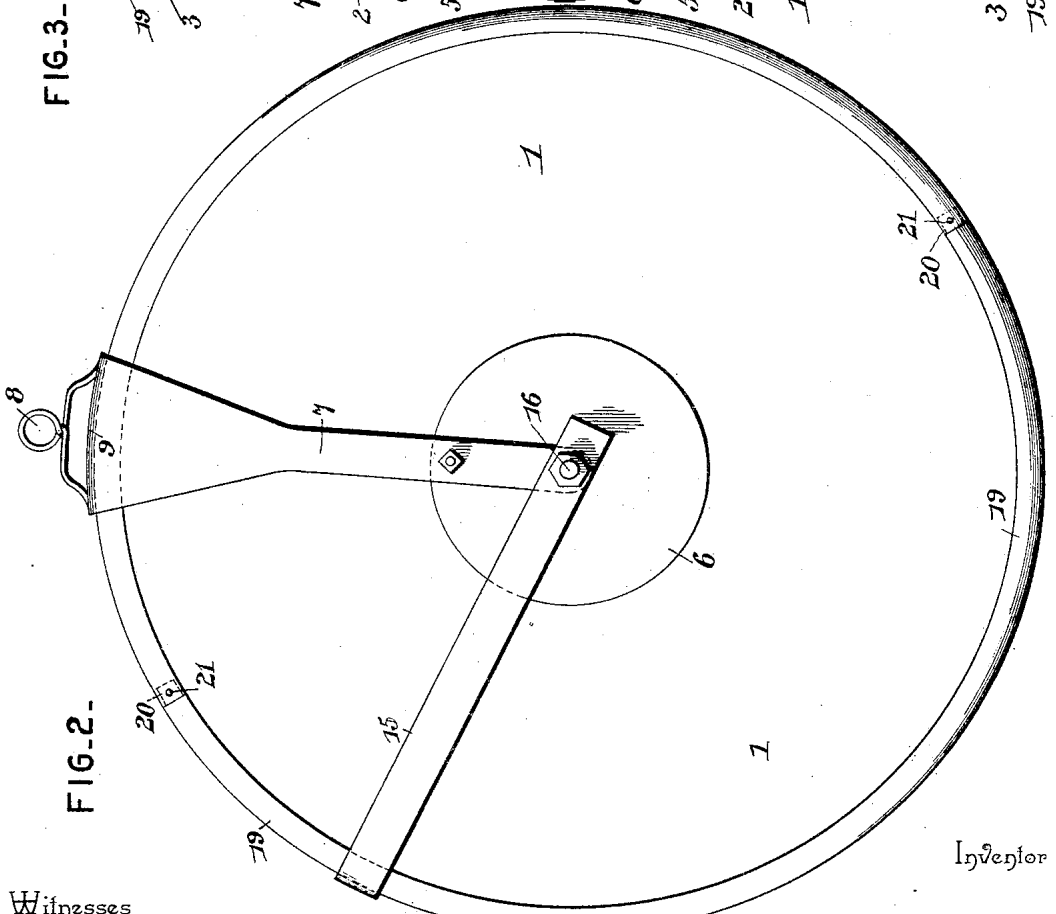


FIG. 2.



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Witnesses

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UNITED STATES PATENT OFFICE.

JOHN L. CATHCART, OF BAY CITY, MICHIGAN.

INTEREST AND TIME INDICATOR.

SPECIFICATION forming part of Letters Patent No. 584,670, dated June 15, 1897.

Application filed February 21, 1896. Serial No. 580,245. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. CATHCART, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented a new and useful Interest and Time Indicator, of which the following is a specification.

This invention aims to facilitate and lessen the task of accountants, bank-clerks, and others whose duty requires them to determine interest upon commercial and other paper and the number of days intervening between the making of a note and the maturity thereof, whether reckoning forward or backward. Not only can the number of days between given dates be determined, but the interest for the same period can be read off, thereby avoiding the loss of time incident to calculating and reducing the chances for inaccuracies and mistakes.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a front view of the indicator. Fig. 2 is a rear view thereof. Fig. 3 is a section on the line X X of Fig. 1, on a larger scale, to show clearly the specific arrangement of the parts, the intermediate parts being broken away. Fig. 4 is a detail section on the line Y Y of Fig. 1 on a larger scale. Fig. 5 is a detail view of the guide-arm bearing the rate of interest and the varying amounts upon which the calculations of the table are based. Fig. 6 is a detail view of the combined suspension and operating arm.

Corresponding and like parts are referred to and designated in the following description and the several views of the accompanying drawings by the same reference-characters.

The base or support 1 is circular in outline and of a diameter corresponding to the capacity of the indicator, and is formed of cardboard, papier-mâché, or other material suitable for the purpose. This base has a central opening 2 and a thickened marginal portion 3. A disk 4 fits snugly within the thickened margin 3, and has a hub 5, which operates in the opening 2, and is retained in operative relation with the base by means of a plate 6, which is firmly attached to the hub 5 and is slightly larger than the opening 2 to overlap that portion of the base adjacent to the said opening. An arm 7 is formed with or attached to the plate 6, and is supplied at its outer end with a loop 8, to be grasped when it is required to move the arm or to be engaged with a nail or projection to suspend the indicator when not required for immediate use. The outer terminal portion of the arm 7 is recurved and extends over the thickened edge portion 3 of the base, as shown at 9, and is formed with a slot 10 and a shield 11, the latter being designed to hide the days of the month adjacent to the one to be exposed, so as to avoid confusion, and the slot 10 exposing the name of the month to preclude hiding the same when determining a computation. The function of the arm 7 is to enable the user to turn the disk 4 to the required position and at the same time support the loop 8, by means of which the device can be hung upon a nail or projecting part, so as to be out of the way, and will be designated as the "suspension and operating" arm.

A sheet 12 of cardboard, celluloid, or other material will be applied to the disk 4 and has inscribed thereon the calculations or tables for determining the amount of interest on definite sums at a given rate of interest from one to three hundred and sixty-five days. It will be understood that the tables may be inscribed directly upon the face of the disk 4; but it is preferred to provide the facing 12, which may be of fine texture and give to the indicator a neat appearance. The sheet 12 will be subdivided by a series of concentric circles 13 into as many annular spaces 14 as there will be circles of tables or figures indicating the amount of interest for a given period. The annular spaces 14 will be divided by radial lines into three hundred and sixty-five spaces to correspond with each day of the year, and the outermost space 14 will be provided with numerals running from "1" to "365," and the adjacent annular space is supplied

with the same numerals, but ranging in an inverse order, the numerals of the outer annular space running consecutively to the right and the numerals of the second annular space extending to the left in the same order. The remaining annular spaces are inscribed with interest-tables whose amounts are based upon a given rate of interest and a fixed sum, which rate of interest and sums are imprinted upon a guide-arm 15. The calculations indicated are based upon a six-per-cent. rate of interest and upon sums ranging from one thousand to ten thousand dollars, inclusive. It will be understood that the rate of interest and the sums can be varied, but for practical purposes the amounts shown will answer all requirements. The rate of interest is designated at the outer end of the guide-arm 15 and the sums at intervals in the length thereof and upon subdivisions corresponding to the annular spaces 14 or the concentric series of interest-tables. The front edge of the guide-arm corresponds to a radius of the disk 4, so that the interest-tables in radial lines with a required day can be readily determined and read, and the outer portion of the guide-arm embraces the edge portion of the base 1, so as to insure a snug fit and close bearing of the arm upon the sheet 12, so that the required amount can be easily read. In the preferable construction the guide-arm 15 is formed of a strip which is folded between its ends so as to embrace the sides of the base, and the inner ends have openings which are adapted to register and receive a bolt or pivot 16, by means of which the guide-arm is secured to the base so as to turn when required. A button 17 is formed on or applied to the inner end of the guide-arm 15 and serves as a friction-disk and as an ornamentation to embellish the central portion of the indicator, and by a proper adjustment of the bolt 16 any required friction can be secured between the button 17 and the adjacent portion of the disk 4, whereby the guide-arm will be held in the located position against accidental slipping.

A ring 18 of cardboard, celluloid, vulcanite, or other appropriate material is fitted to the thickened marginal portion 3 of the base in such a manner as to be readily removed, and bears the names of the calendar months, the year, the days of the week, and the dates of the months, the subdivisions having the dates of the months and the names of the days inscribed thereon corresponding to the radial subdivisions of the sheet 12, bearing the interest-tables and the days of the year, the graduations being accurately made, so that the radial lines will all register when any one is brought into alinement to determine a computation. The reason for making the ring 18 detachable is that it may be replaced each year by a new one, so that an accurate calendar, as well as indicator, may be provided. The ring 18 is slightly wider than the thickened marginal portion 3 and overlaps the outer edge portion of the disk 4, thereby bringing the surface of the sheet 12 and the ring flush. A metal binding 19 is applied to the edge of the base 1 and is formed in sections, which are secured together at their meeting ends in any convenient way, so as to be readily separable when it is required to remove the binding to substitute the ring 18 by a new one or for any other purpose. As shown, a piece 20 is secured to one of the meeting ends and enters the opposite end of the adjacent section and is connected thereto by a pin 21. This is only one of many ways for attaining the desired end. The parallel portions of the metal binding embrace the sides of the edge portion of the base 1 and serve as a means to secure the ring 18 in place in addition to giving a finished appearance to the peripheral edge portion of the indicator. A pointer 22 is imprinted upon, cemented, or otherwise applied to the disk 4 and separates the two circles of numerals disposed in reverse order from "1" to "365," and enables the date from which the reckoning is to be computed to be determined with ease. The base 1 and the ring 18 are fixed, and the disk 4 is rotatable, being turned by means of the operating-arm 7. Suppose a paper is dated November 6 and matures January 5, and its face value is one thousand dollars and bears interest at the rate of six per cent. per annum, and it is required to determine the number of days and the amount of interest at the maturity of the paper. The disk 4 is rotated until the pointer 22 comes opposite the date "November 6," (indicated by the ring 18,) and the guide-arm 15 is moved until its front edge is in line with the date "January 5," (indicated by the said ring 18.) By following along the edge of the guide-arm the numeral "60" will be found in the first circle of figures on the disk 4, thereby showing that the number of days is sixty, and by following the guide-arm to the interest-table the amount "$10" will be located opposite the amount "$1,000," thereby showing that the interest due is ten dollars. If the face value of the paper is four thousand dollars, the amount "$40" will be found opposite the space bearing "$4,000" on the guide-arm 15.

It will be understood that the rate of interest can be changed and the amounts indicated on the guide-arm 15 varied, but in each instance the interest-tables must be calculated to suit the rate of interest and the various amounts inscribed upon the guide-arm. For amounts and rate of interest not indicated a slight computation will enable the user after a short practice to become expert in determining the amount from the sum designated by the indicator.

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

1. An indicator for the purposes set forth, comprising a circular base having its outer edge portion thickened and bearing a ring having inscribed thereon the names of the months, the year, the calendar days, and the

dates of the months, a disk rotatably mounted within and coming flush with the thickened edge portion of the base and subdivided by concentric and radial lines into spaces, the outer two annular spaces being reversely numbered from "1" to "365" to correspond with the number of days in a year, and the inner or remaining annular spaces having interest-tables inscribed thereon, a radially-disposed pointer applied to the rotatable disk and designating the line of separation between the concentric series of numerals and figures, and a guide-arm pivoted concentric with the base and disk and bearing the rate of interest and subdivided into spaces corresponding with the circles of interest-tables, each space having an amount corresponding to that forming the basis upon which the said interest-tables are calculated, substantially as and for the purpose set forth.

2. In an indicator for the purposes specified, a circular base having inscribed on its marginal portion the names of the months, calendar days, and the days of the months, a disk rotatably mounted within the base and bearing concentric circles of numerals about its edge portion ranging from "1" to "365" in inverse order to correspond with the number of days in a year, and having interest-tables and an indicator designating the line of separation between the said numerals and the tables, an operating-arm attached to the rotatable disk and having its end portion recurved and extending over the marginal portion of the base, and terminating in a shield and formed with a slot, and a guide-arm movable independently of the base, disk and operating-arm, and bearing the rate of interest and the sums forming the basis upon which the said interest-tables have been calculated, the operating and guide arms determining the time, and the guide-arm indicating in conjunction with the interest-tables the required result, substantially as specified.

3. The combination with a circular base, a rotatable disk fitted to the base and having inscribed thereon a circle of numerals ranging from "1" to "365" and corresponding concentric circles of interest-tables, and a guide-arm bearing the rate of interest and the sums forming the basis for the said interest-tables, of a ring removably fitted to the base and bearing the names of the months, the year, the days of the week, and the dates of the calendar months, and a metal binding applied to the edge of the base and serving as a means to secure the said ring thereto, substantially as and for the purpose set forth.

4. In combination, a base having a circular depression, a disk snugly and rotatably fitted within the circular depression of the base and having its edge portion of a thickness corresponding to the adjacent portion of the base, and having its central portion provided with interest-tables and a circle of numerals ranging from "1" to "365," a ring applied to the face of the base and overlapping the circular depression and the reduced edge portion of the rotatable disk and coming flush with the central portion thereof, and having inscribed thereon the names of the calendar months and the dates thereof, and an arm having characters to coöperate with the matter on the ring and disk and pivoted concentric with the axis of the said disk, substantially as and for the purpose set forth.

5. The combination with a circular base having concentric circles of numerals and designating-characters, of a guide-arm bearing characters to coöperate with corresponding characters of the base to designate the required result, and formed from a strip doubled upon itself, providing members which embrace the sides of the base, a friction-disk secured to a terminal of a member, and a bolt or kindred fastening for pivotally connecting the terminals of the said guide-arm with the base at a point corresponding with the center from which the various circles of designating-characters are struck, and adapted to be tightened or loosened to cause the friction-disk to bear with a greater or less pressure against the base to vary the resistance to the movement of the said guide-arm, substantially as and for the purpose specified.

6. The herein-described indicator, comprising a circular base centrally apertured and having a thickened marginal edge portion, a disk rotatably supported upon the base within its thickened edge portion and having a hub operating in the central opening of the base, and having inscribed thereon adjacent circles of numerals ranging from "1" to "365" in reverse order and corresponding concentric circles of interest-tables, a ring removably fitted to the thickened edge portion of the base and bearing the names of the calendar months and the dates thereof, a pointer radially disposed and denoting the line of separation between the concentric circles of numerals and interest-tables, a guide-arm embracing the sides of the base and rotatable disk and having pivotal connection therewith, and bearing the rate of interest and the amounts forming the basis of the interest-tables, a metal binding removably fitted to the edge of the base and serving as a means to secure the ring thereto, and an operating-arm secured to the hub portion of the rotatable disk and having its outer portion provided with a suspension-loop and recurved to extend over the aforesaid ring, and formed with a slot and a shield, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN L. CATHCART.

Witnesses:
JENNIE MULHALL,
MAE M. FAIR.