(No Model.)

M. J. OVERELL.

READY CALCULATOR.

No. 580,464. Patented Apr. 13, 1897.

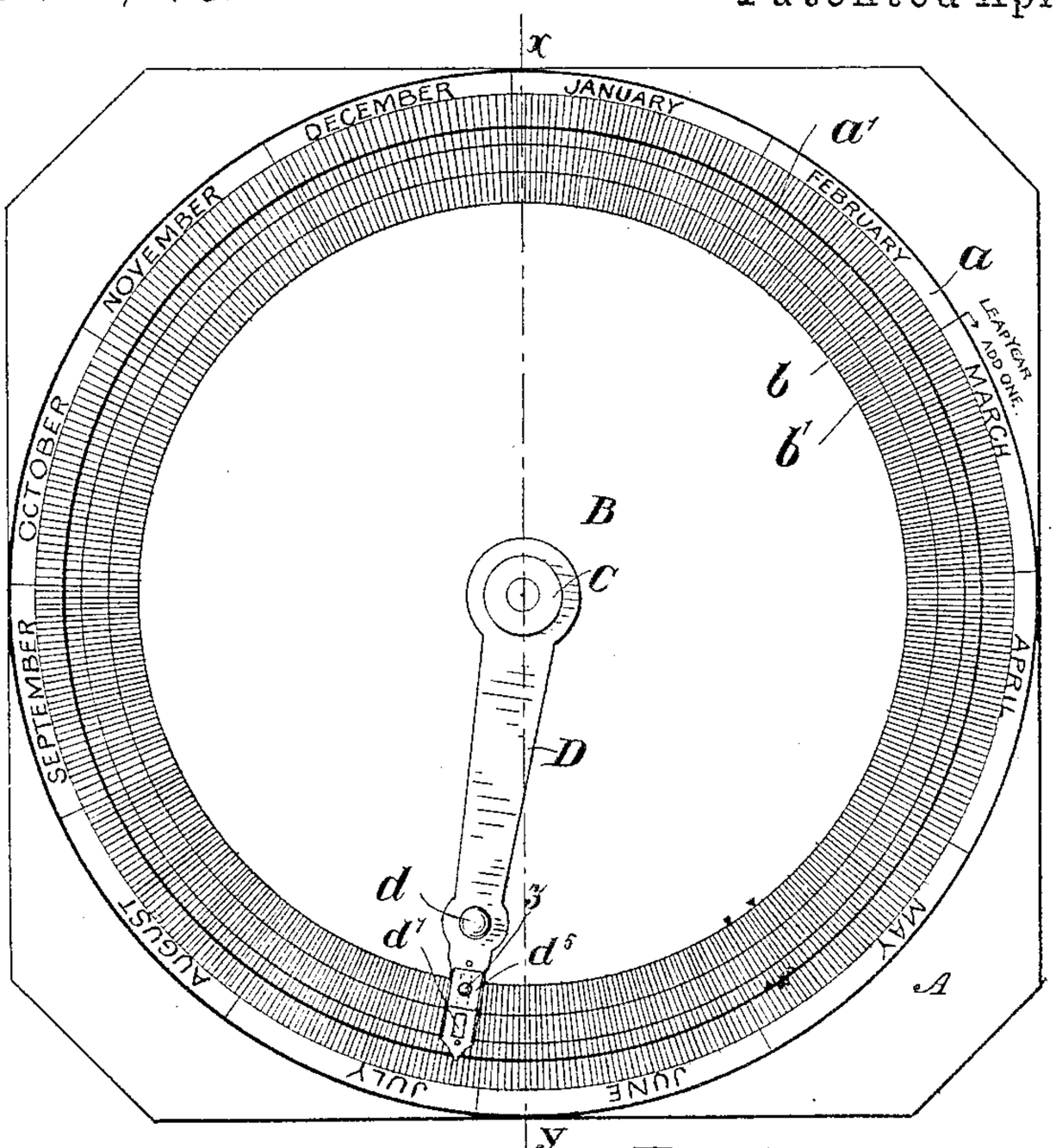

Fig. 1.

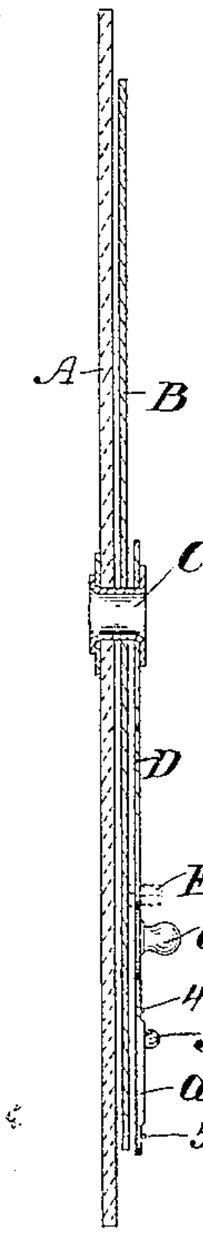

Fig. 1a

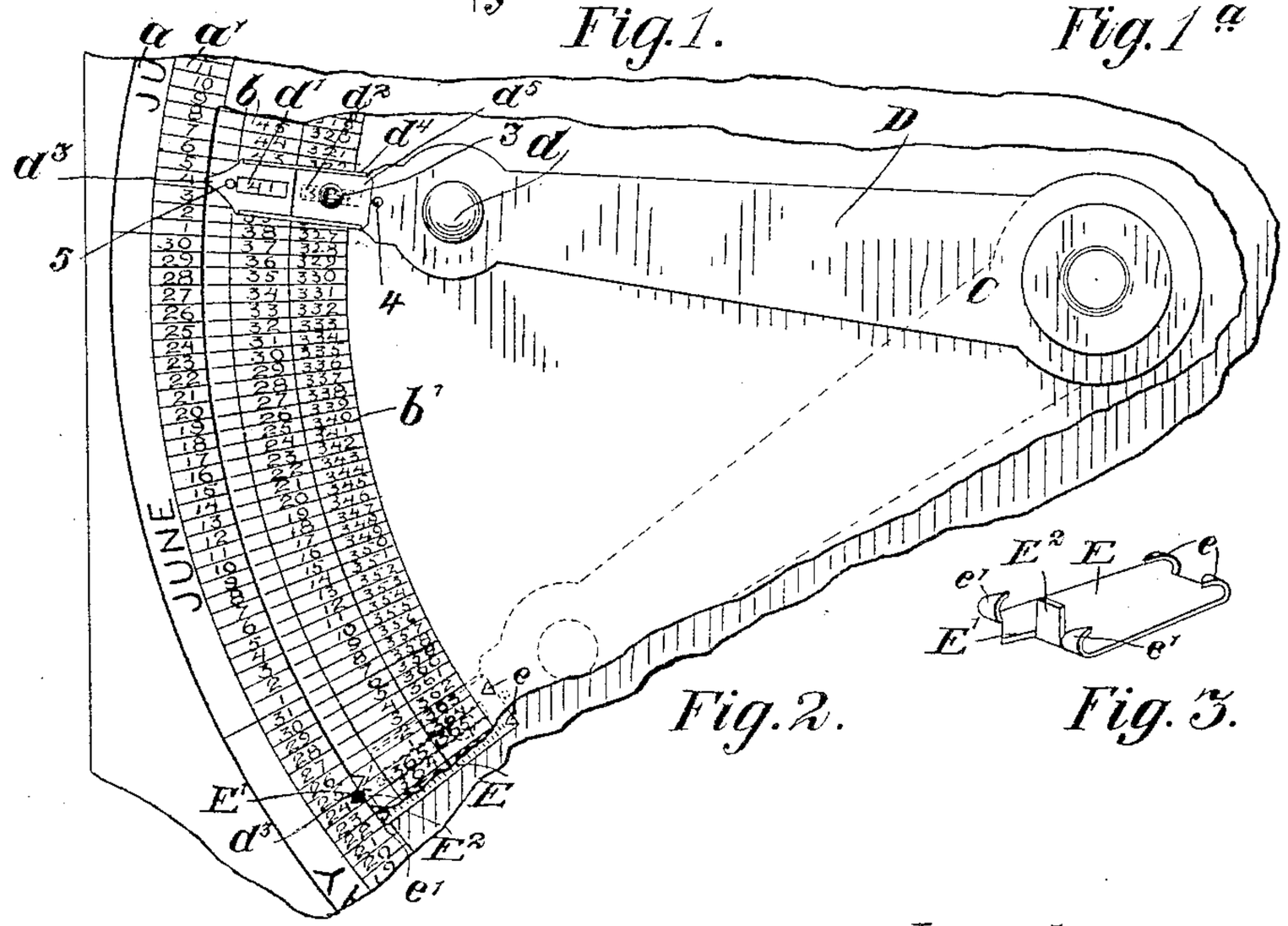

Fig. 2.

Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

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READY CALCULATOR.

SPECIFICATION forming part of Letters Patent No. 580,464, dated April 13, 1897.

Application filed March 6, 1896. Serial No. 582,074. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE JAMES OVERELL, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Ready Calculators, of which the following is a specification.

The object of the invention is to devise a simple apparatus whereby the exact number of days from one date to another may be instantly ascertained without any mental calculation nor the necessity of employing the complicated tables at present in use; and it consists, essentially, of a tabulated card with the twelve months of the year arranged circularly adjacent to the circumference of the circle and the dates of the months arranged in equal radial spaces within their correspondingly-designated months and of a circular disk pivoted in the center of the circularly-arranged tabulated months and having a corresponding number of spaces which are always opposite the radially-arranged date-spaces under the designated months, the said spaces being numbered from "1" to "365" in the edge circle in one direction and from "1" to "365" in the opposite direction in the inner circle, the number "365" in each circle being arranged radially opposite, an index-pointer and stop being provided on the edge of the rotatable disk and an arm being provided pivoted on the center pin of the disk and having slots and an index-pointer, the parts being arranged to be operated in the manner hereinafter more particularly explained.

Figure 1 is a plan view of my apparatus. Fig. 1ª is a section through the apparatus on the line *x y*, Fig. 1. Fig. 2 is an enlarged plan view of portion of the apparatus. Fig. 3 is a detail of the plate, showing the edge stop and pointer for the rotatable disk.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is a bottom plate or card upon which are arranged stationary within a circle the months of the year, such months being divided off into twelve spaces *a*, which are subdivided radially within the names in the spaces *a* into smaller spaces *a'*, which contain the dates of the months from "1" to "28" or "31," as the case may be.

B is a disk which is pivoted centrally, preferably on a hollow rivet C in the center of the graduated circle. The circumferential edge of the disk B, I divide into spaces *b*, corresponding exactly in number and always designed to be radially opposite the spaces *a'* in the circle of months each with the other.

Inside of the spaces *b* I provide spaces *b'*, radially opposite. The spaces *b* have numbers graduated from "1" to "365." The spaces *b'* have also numbers graduated from "1" to "365," the number "365" in the space *b'* being opposite the number "365" in the space *b*, but the numbers in the spaces *b'* are graduated to follow around the circle in the opposite direction from those in the spaces *b*.

D is an arm pivoted at one end on the pivotal rivet C and having near the opposite end a knob *d*. Diametrically outside of the knob *d* I provide radial slots *d' d²*, and diametrically outside these slots I provide an index-pointer *d³*.

I form side guides *d⁴* on each side of the arm D, opposite the slots *d'* and *d²*, and provide a sliding plate *d⁵*, which is provided with a knob 3.

4 and 5 are stop-pins at the inner and outer ends of the slot, designed to limit the movement of the plate *d⁵*. When it is desired to read the number of days forward to a given date, the slide *d⁵* is placed over the inner slot *d²*, and when it is desired to read the number of days back the slide *d⁵* is placed over the slot *d'*.

E is a plate which I secure by the cleats *e* and *e'* to the disk D. The cleats *e* are passed through the disk B and flattened down, as indicated in Fig. 2, and the cleats *e'* are passed over the edge of the disk B and flattened down.

E' is an index-pointer which is situated radially opposite the space containing the number "365." This index-pointer E' forms portion of the plate E.

E² is a stop also forming portion of the plate E and preferably turned vertically upward close to the edge of the disk E.

The stop E² is of great utility, as when the arm D is thrown to the left it carries the revolving disk with it, thus bringing the pointer carried by same to any desired date to be calculated from or to, after which the arm

may be thrown to the right until it points to any other desired date. Thus it will be seen that one handle in connection with stop E^2 accomplishes two purposes, that is, bringing revolving disk to any desired position readily, accurately, and under perfect control and moving pointer to any date in the year, thus making it unnecessary to remove the hand from the handle of the said pointer.

Having now particularly described the principal parts involved in my invention, I shall briefly describe its operation.

I will suppose, as in Fig. 2, that it is desired to find the number of days from the 24th of May to the 4th of July. To do this, the disk must be turned so that the pointer E′ comes opposite the 24th of May. The arm is thrown so that the index-pointer d^3 is against the stop E^2, as indicated by dotted lines in this figure. By bringing it to the position shown in full lines—viz., with the index-pointer d^3 opposite the 4th of July—it will be seen that through the slot d' the number "41" will be read, thus indicating that there are forty-one days from the 24th of May to the 4th of July on which interest is to be reckoned. The same operation would take place in reckoning notes at two months or for any given number of days or months.

There is a decided advantage in having the circle graduated to represent months and days of the month stationary, as by that means a date may be found very much more quickly as the eye becomes accustomed to look for any given date at a certain position on the circle, and when this circle is movable it is evident the position would change and thus cause confusion. I am not aware that this arrangement has ever been used before. It will also be noticed that in my invention the spaces representing the days of the month being immediately adjacent to the movable disk facilitate great accuracy in the operation of my invention.

By means of the second circle of figures, "1" to "365," running from right to left around the circle, as well as the edge circle running from left to right, the number of days either forward or backward to any date may be read with equal facility. The great advantage of this will be apparent when it is considered that the rule with business men is to calculate interest to the end of their financial year. Thus it is necessary to calculate from a number of dates scattered throughout the year to a given date. Now this does away with the necessity of the position of revolving disk being altered for each change or date being calculated from—as, for example, the number of days is required to October 31 from January 27, February 15, March 9, May 7, August 29. This would make it necessary to move disk five times according to former inventions, whereas with my invention it would merely be necessary to set the disk so that its pointer is opposite "October 31st," when the number of days could easily be read to any of the given dates. The great saving of time this involves can be easily appreciated, as when closing a set of books for the year a great deal of this work is necessary. It is also of great advantage in averaging accounts, as the time between dates of invoices and date of rendering statement and also dating forward from date of invoices to date payment becomes due can be had by one movement of disk, and as it is the rule to render accounts at the end of a month and a great many are made up at the same date the disk being set to the date at which statements are being made up no further movement is necessary, and the number of days can be seen at a glance.

The importance of my invention will be seen when it is understood that bankers, financial corporations, manufacturers, and the commercial world generally in reckoning interest upon notes and commercial securities always calculate the number of days that the security has to run in order to find the interest for the portion of the year indicated by such number of days.

What I claim as my invention is—

The combination with the plate having a tabulated circle with spaces a and a', of the disk B having the day-spaces b, the arm D provided with an index-pointer d^3 and the plate E secured underneath the disk B and provided with a pointer E′ and vertical stop E^2 forming portion of the plate as and for the purpose specified.

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Witnesses:

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