T. J. THORP

Calendars.

No. 156,391. Patented Oct. 27, 1874.

Fig. 1.

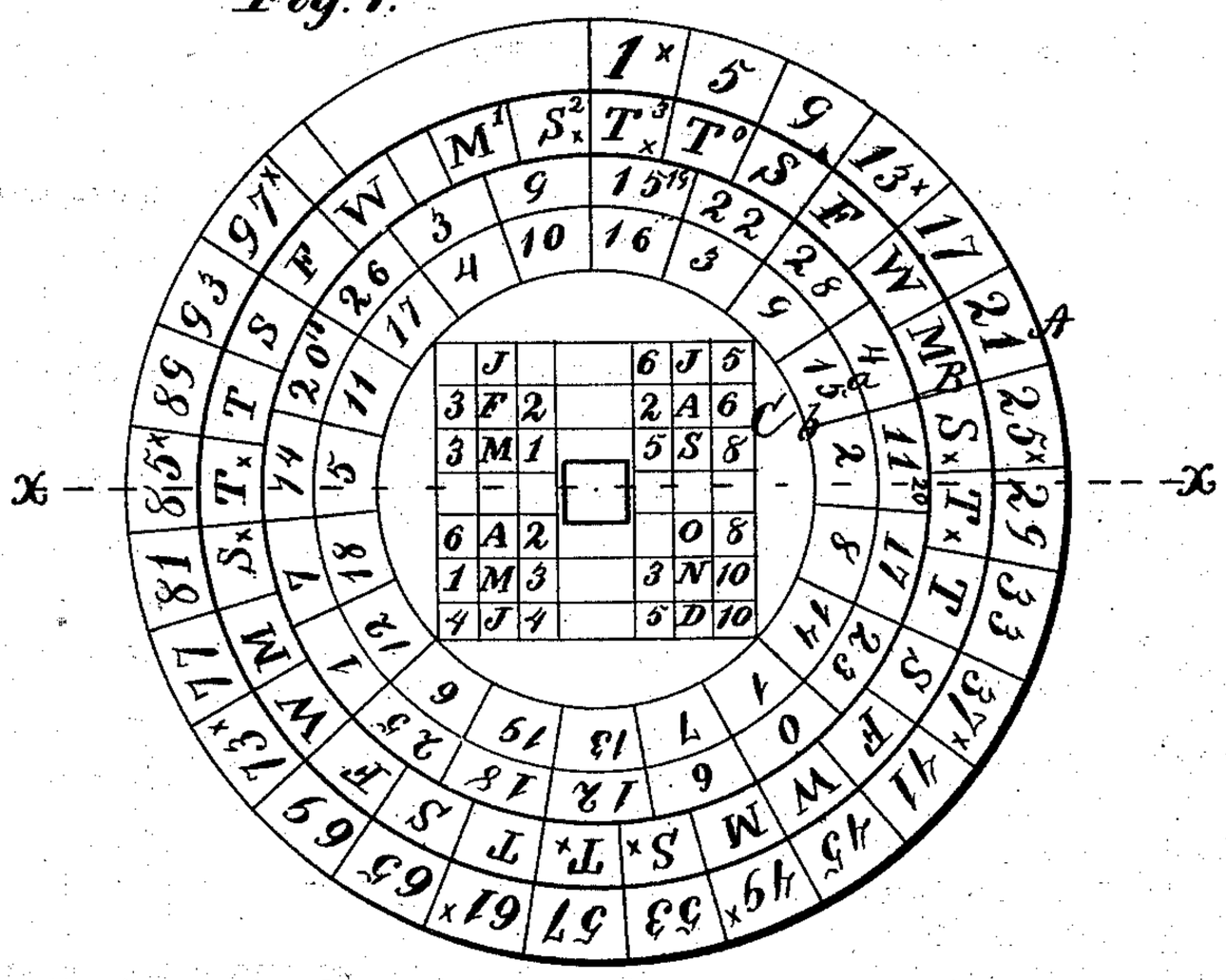


Fig. 2.

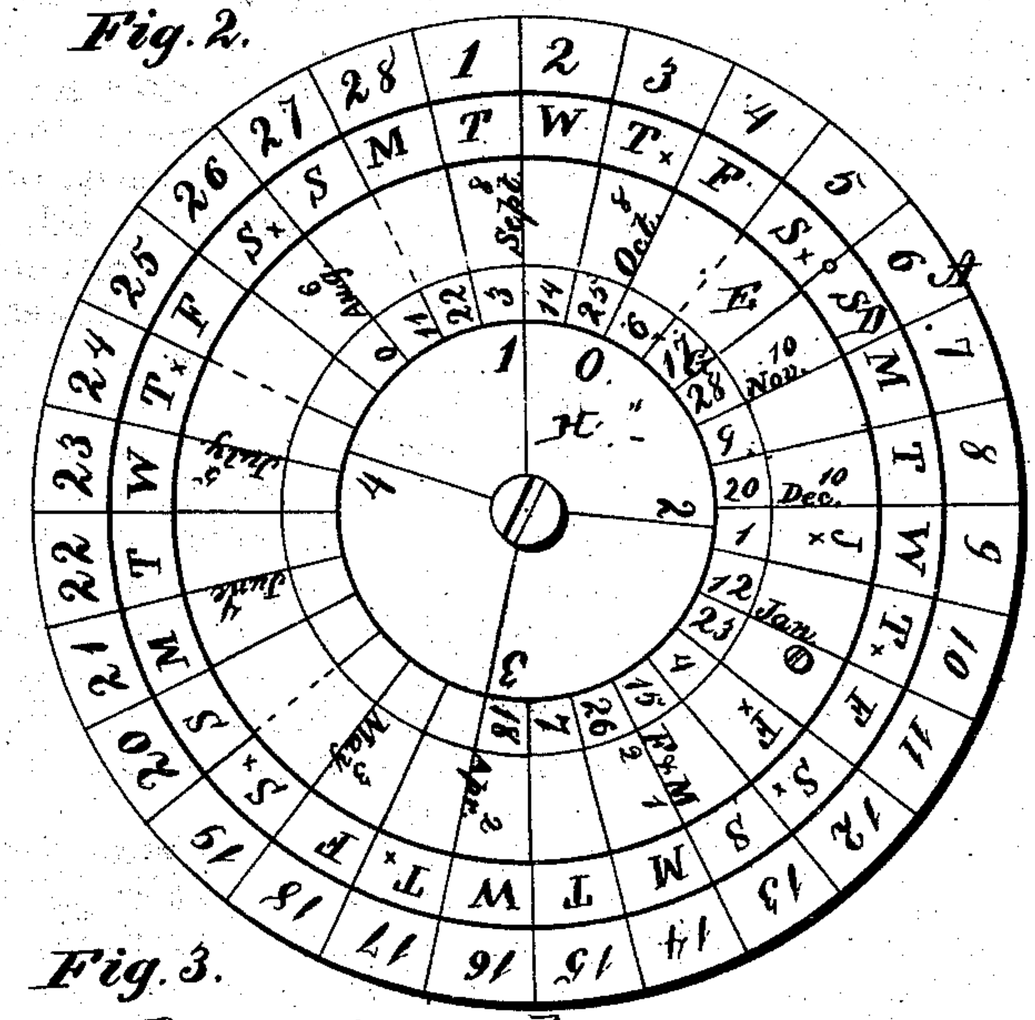
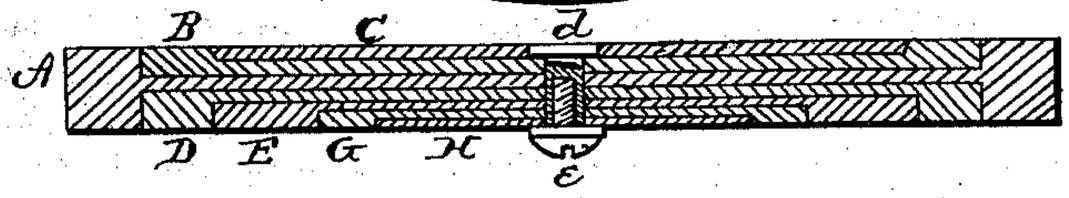


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS J. THORP, OF NAVARRE, OHIO.

IMPROVEMENT IN CALENDARS.

Specification forming part of Letters Patent No. **156,391,** dated October 27, 1874; application filed September 23, 1874.

To all whom it may concern:

Be it known that I, THOMAS J. THORP, of Navarre, in the county of Stark and in the State of Ohio, have invented certain new and useful Improvements in Calendars; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a calendar, having upon one side a century-calendar, and upon the reverse side a calendar for a year, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a view of one side of my calendar. Fig. 2 is a view of the reverse side thereof. Fig. 3 is a longitudinal section of the same through the line *x x*, Fig. 1.

A represents a circular plate or disk of any suitable diameter and thickness, and made of any material desired. The upper surface of this disk or plate is provided with a circular recess for the reception of a circular plate or disk, B, and this disk is in turn recessed to receive a central disk or plate, C, the upper surfaces of the three disks being perfectly flush or even with each other. A suitable distance from the periphery of the center plate C, in the upper surface of the same, are made two concentric circles, *a b*, and the annular space bordered by the inner circle *b*, and the periphery of the disk is divided by radial lines into nineteen equal spaces, as shown in Fig. 1. In these spaces, between the circles *a* and *b*, the numbers 1 to 19 are engraved, stamped, or otherwise affixed in such a manner that there shall be a difference of six between any two adjoining numbers. In the corresponding spaces, between the outer circle *a* and the periphery of the disk C, are numbers indicating the difference of days in the moon's age at the beginning of each year in the cycle of nineteen years.

The two series of figures are arranged in the following manner:

Golden No.	Epacts.	Golden No.	Epacts.
1	0	4	3
7	6	10	9
13	12	16	15
19	18	3	22
6	25	9	28
12	1	15	4
18	7	2	11
5	14	8	17
11	20	14	23
17	26		

The surfaces of the two plates A and B, beyond the edge of the central plate C, are, by radial lines, divided into a series of spaces of such size that any three of these spaces will correspond with two spaces on the plate C; or, in other words, every other division-line on the plate C will correspond with every third division-line on the plates B and A.

In the spaces on the plate A are the numbers of the years in the century in an arithmetical series of four, so that, commencing with 1, the next will be 5, then 9, 13, 17, 21, and so on to 97, which is the next. In the spaces on the plate B are the days of the week, marked in such order that there will be five days intervening between any two adjoining spaces, because in every space of four years omitted on the surface of the plate A is one leap-year.

Supposing that the first year in the nineteenth century commenced on Thursday, and the calendar set accordingly, as shown in Fig. 1, the day upon which any other year in that century commences can easily be seen; for instance, the year 1873 is shown to commence on Wednesday, and any year not shown on the plate A can be found by simply adding as many days as the year is ahead of the next lowest one marked. The year 1875 is two ahead of the next lowest (1873) marked; therefore, add two days to Wednesday, and it will be seen that the year 1875 will commence on Friday. In like manner the day upon which any year in the century commences can easily be ascertained. The plate

C being also set at the beginning of the century, with the golden number 16 opposite the first year, shows that the moon then is fifteen days old.

To find the age of the moon on the first day of any other year in the century, I have marked every third space on the plate A with a star, (*,) as the division-line to the left of every third space corresponds with the division-line to the left of every second space on the plate C, and only the years thus marked will be used. For instance, the year 1873 shows at once that the moon is one day old at the beginning of the year.

For any year not marked the following is an example: Take 1875, the year next lowest marked is 73, the golden number of 73 is 12, and as I must add 2 to 73 to get 75, I add 2 to the golden number 12, which gives 14 as the golden number of 1875, and opposite 14 on the plate C is 23, showing that the moon on the first day of the year 1875 will be twenty-three days old.

In the center of the plate C are the initials of the months in the year, and certain figures on each side thereof. The figures to the left show how many days to add to find the first day of any month when the first day of the year has been found, and the figures to the right show how many days to add to find the age of the moon on the first day of any month when its age has been found on the first day of the year.

In place of making the plates B and C separate from the plate A, one single plate may be used with the various letters and figures thereon, as described, because ordinarily a calendar for a single century is sufficient, and even then the same calculations may be made for any other century by a very simple rule. When this face of the calendar is made in three parts, as described, the calendar will be set on the first day of each century.

The reverse side of the plate A is also recessed, and in precisely the same manner are placed therein four plates or disks, D, E, G, and H, and all the plates on both sides of the main plate A are clamped together and to said main plate by means of a hollow post, *d*, and screw *e*, as shown in Fig. 3. On the face of the plates A, D, E, and G are made radial division-line, forming twenty-eight equal spaces, and in said spaces on the plate A are the numbers 1 to 28, as shown in Fig. 2. In the corresponding spaces on the plate D are marked the days of the week in regular rotation, and on the plate E the months of the year are marked in the following manner: Between the spaces in which the months are marked are as many vacant spaces as there are days in the month over twenty-nine, except between December and January, where there is only one vacant space left. February and March are in the same space, as February generally has only twenty-eight days. These plates being set so as to show the 1st of September is on Tuesday, it tells the date of every day up to and including the 28th, and the 29th will be on the same day as the 1st, the 30th on the same day as the 2d, and the word October is opposite the day upon which the first day of that month will come. On the first of the month the plates D and E will be set.

This part of the calendar will show at all times what day the first of any month will come.

On the plate G are marked the epacts of the moon's age at the first of the year, and this plate should be set at the first of the year with the proper number opposite January, and at the side of each month on the plate E are numbers to denote how many days to add to the epact of the current year to find the age of the moon on the first of any month.

The plate H is by radial lines divided into four spaces corresponding with the four quarters of the moon, the lines being marked 1 to 4. If, for instance, the first quarter of the moon commences on the 1st of September, the second will be seen to commence on the 9th, the third between the 16th and 17th, and the fourth on the 24th. The fourth quarter extends as far beyond the line 1 as the point marked 0, when the plate H must be set again.

The plates D, E, and G should be clamped together, independent of the other plates, so as to be set together at the first of the year and retain their relative position during all the changes necessary for that year.

Instead of recessed plates, as herein described, concentric rings with beveled edges may be used on the main plate A, as may be deemed most economical and advantageous in the manufacture of the calendar.

The calendar may be made of any material desired, and of any size, small and large. It may be made of suitable size to attach to a watch-chain as a guard.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a pocket-calendar, of the circular metallic plate A, recessed on both sides, the movable metal ring B, and plate C on one side of plate A, and the movable metal plates D E H on the other side of the plate, the said plates and rings being provided with characters, as described, and united together by the tube *d* and screw *e*, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of September, 1874.

THOMAS J. THORP.

Witnesses:

H. A. HALL,

C. L. EVERTS.