Feb. 20, 1951 E. REINER 2,542,943

TIME INTERVAL INDICATING CALENDAR

Filed April 19, 1950 2 Sheets-Sheet 1

Fig. 1

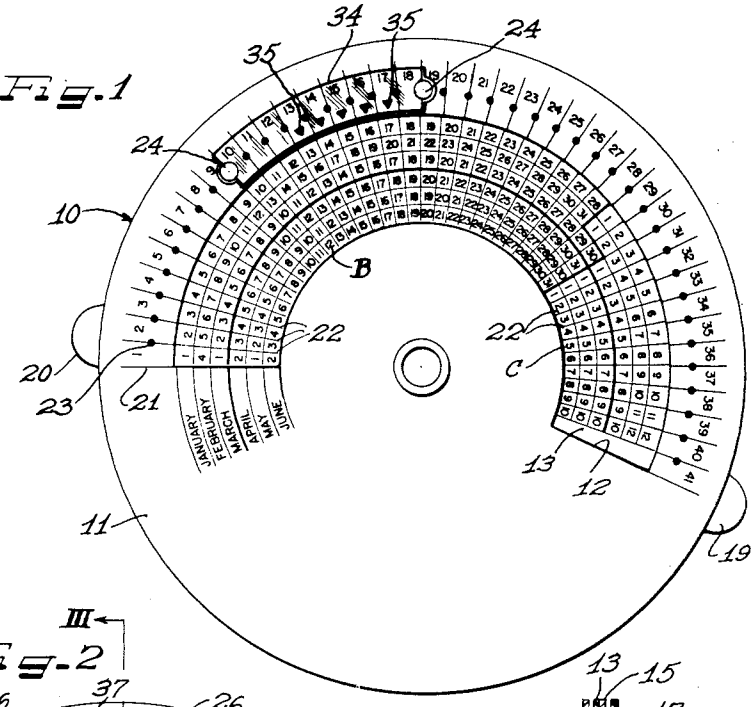


Fig. 2

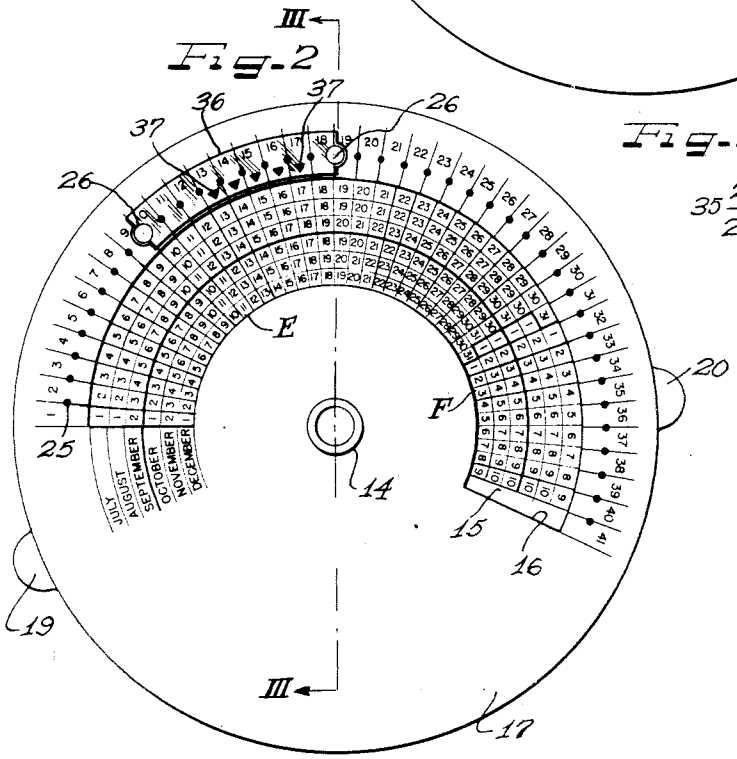
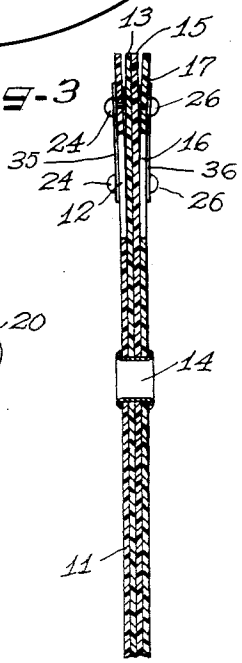


Fig. 3



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Fig. 4

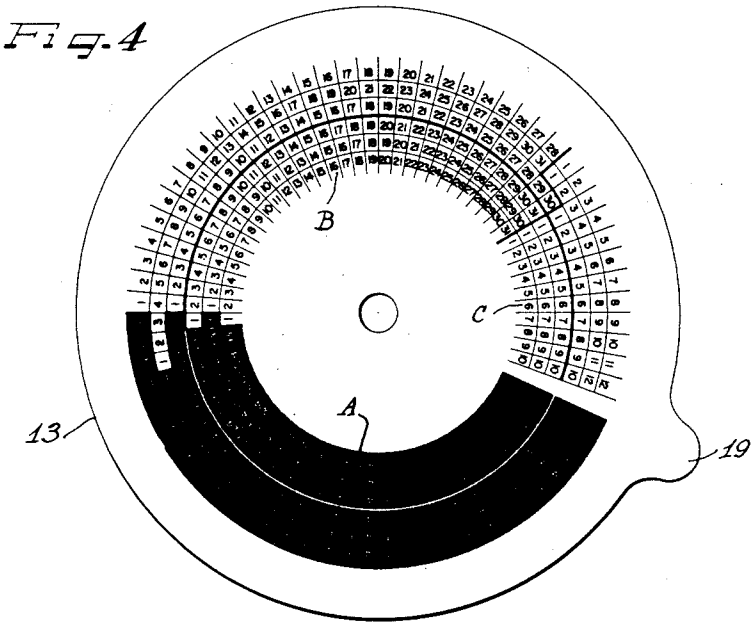
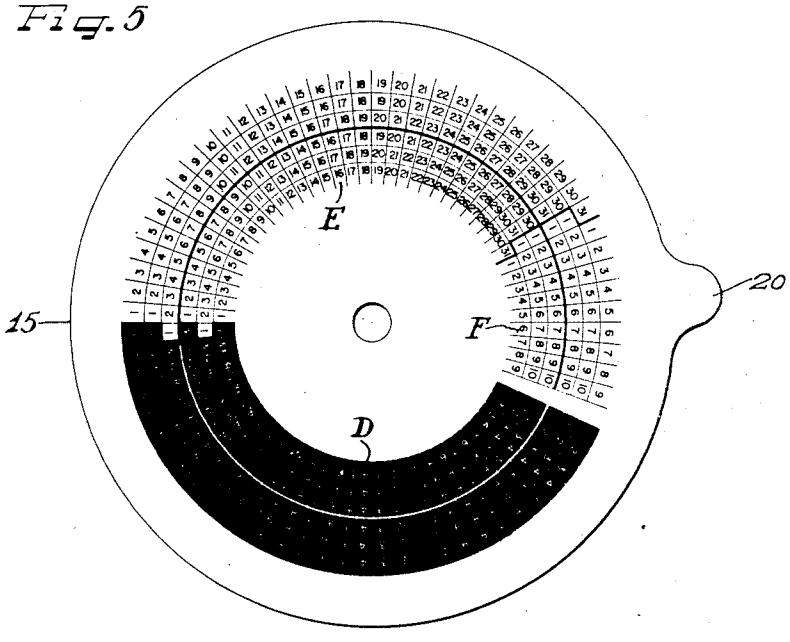


Fig. 5



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TIME INTERVAL INDICATING CALENDAR

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2 Claims. (Cl. 235—88)

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This invention relates to a new and improved time interval indicating calendar for determining the days of fertility of a female having relatively regular menstrual periods.

Calendars for indicating the time interval and days of fertility of females have heretofore been used, one such calendar being disclosed in U. S. Patent No. 1,942,754, which issued to Heinrich Heyssler January 9, 1934. While such calendars have been both reliable and successful, their usefulness has been limited, due principally to the fact that they cannot be adapted to take care of women having menstrual periods longer or shorter than four weeks. This is a serious limitation to the use and reliability of the calendar for the reason that statistics taken over a period of years show that the common belief that most women menstruate regularly every twenty-eight days is entirely erroneous and that this cycle of menstruation is present only with a small percentage of women, the cycle for different healthy women being from as low as every nineteen to twenty-three days to as great as every forty-one or forty-five days, and even going as high as fifty days and over in certain cases.

The principal objects of my invention are to remedy the aforementioned deficiencies of time interval indicating calendars by providing a calendar which may be universally used by the average healthy woman having relatively regular menstrual periods, regardless of the length of the cycle of menstruation.

Another object of my invention is to provide a new and improved time interval indicating calendar having a greater range than former calendars and arranged to efficiently take care of a wide variation of healthy women.

A more specific object of my invention is to provide a time interval indicating calendar having detachable markers spaced in definite positions on the calendar in accordance with the cycle of menstruation of the woman using the calendar and indicating both the period of fertility and ovulation of the individual woman using the calendar.

These and other objects of my invention will appear from time to time as the following specification proceeds and with reference to the accompanying drawings wherein—

Figure 1 is a plan view of a time interval calendar constructed in accordance with my invention showing the calendar in a neutral position;

Figure 2 is a view somewhat similar to Figure 1 but showing the opposite side of the calendar from that shown in Figure 1;

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Figure 3 is a transverse sectional view taken substantially along line III—III of Figure 2;

Figure 4 is a plan view of one of the movable inner disks of the calendar, calibrated for the first six months of the year; and

Figure 5 is a plan view of the other movable inner disk of the calendar, calibrated for the second six months of the year.

A time interval calendar 10 is shown in the drawings as including an outer disk 11 herein shown as being circular and calibrated for the first six months of the year. The disk 11 has a segmental window 12 formed therein through which may be viewed a disk 13 rotatably mounted on a hollow rivet 14 concentric with the center of the disk 11. The disk 13 is shown as being abutted by a disk 15, calibrated on its outer face for the second six months of the year and also pivotally mounted on the rivet 14. The calibrated face of the disk 15 faces a window 16 formed in an outer disk 17 on the rivet 14 and calibrated for the second six months of the year.

The disks 11, 13, 15 and 17 may be made from any suitable material, such as plastic, celluloid, a thin metal, or a durable form of cardboard. While the disks 13 and 15 are herein shown as being separate disks, calibrated only on their outer faces, these disks need not be separate disks but may be a single disk as well, calibrated on both faces. For convenience, however, I use a single disk calibrated on one face only, but do not wish to be construed as limiting myself to a single disk.

The disk 13 has a tab 19 extending from the periphery thereof beyond the disk 11 to permit turning said disk relatively to the disk 11 by the fingers. In a like manner the disk 15 has a tab 20 extending from the periphery thereof for engagement by the fingers to turn said disk with respect to the disk 17.

In Figure 4 the disk 13 is shown as having three sets of indications thereon for each month of the first half of the year and arranged in concentric circles. The first set of indications, indicated by reference character A, is shown as comprising six sets of white numerals on a black background. These numerals represent the days of the month during which menstruation occurs for each month of the first half of the year, the month of January being represented by the outer concentric circle. The second set of indications is indicated by reference character B and is shown as comprising black numerals on a white background consecutively arranged in the same concentric circles as the indications indicated by the refer-

ence character A. This second set of numerals represents the days of the month next following the month in which menstruation occurs. A third set of numerals designated by reference character C is shown as being arranged consecutively along the same concentric circles as the numerals A and B. These numerals represent an initial number of days of the third month following menstruation, the number of days being determined by the maximum probable cycle of menstruation, as calculated from the observations of Latz and Reiner published in the Journal of the American Medical Association, volume 105, October 19, 1935, page 1244.

The disk 15 has indications D, E and F on its outer face, similar to the indications A, B and C and arranged in concentric circles on the face of said disk. The indications D, E and F, like the indications on the disk 13, comprise numerals representing the days of the month during which menstruation occurs, the days of the next following month, and an initial number of days of the second month after menstruation, respectively, for the second six months of the year.

The outer disk 11 has the months of the year for the first half thereof printed thereon adjacent one edge of the window 12 in concentric circles in alignment with the concentric circles on the the disk 13 having the days of the month therebetween. The month of January is placed in the outer concentric circle and the other months are spaced inwardly therefrom in consecutive order for convenience in reading the calendar.

In a like manner the disk 17 has the months of the year for the second half thereof printed thereon in concentric circles adjacent the advance edge of the window 16 and in alignment with the concentric circles on the disk 15, having the indications D, E and F therebetween, the month of July being in the outer concentric circle, and the other months being spaced inwardly therefrom in consecutive order.

The segmental window 12 in the disk 11 is herein shown as extending along said disk for more than 180° and being divided by radial lines 21—21 extending outwardly from the outer periphery of said window and coinciding with radial lines 22—22 separating the numerals on the disk 13, when a numeral on said disk is positioned at the advance or left-hand edge of said window. The radial lines 21—21 divide the window 12 into forty-one equal divisions, representing the days after the beginning of menstruation, and having numerals 1 to 41 arranged therein in consecutive order.

A plurality of apertures 23—23 extend through the outer disk 11 between the indicating numerals thereon and are herein shown as being centered on the radial lines dividing the space within the window 12 into forty-one equal divisions. Two markers 24—24 are adapted to be inserted in certain of the apertures 23—23 in spaced relation with respect to each other and to detachably secure a transparent indicating segment 34 to the outside of the disk 11 between the markers 24—24. The segment 34, as herein shown, has a plurality of arrows 35—35 thereon, indicating the days of ovulation of the female. The position of the markers 24—24 and of the segment 34 varies for different females, depending upon the period of fertility or conception of the individual female using the calendar and determined by the female's physician after a period of observation of the menstrual cycle of the individual to use the calendar.

One such table is that prepared by Dr. H. Knaus, formerly head of the Clinic of Gynecology and Obstetrics of the University of Prague, showing the periods of fertility for regular cycles of menstruation within limits of twenty-one to forty days. By this table, where the menstrual cycle varies from twenty-seven to thirty-one days, the conception period will be the 10th to the 18th days after menstruation. One marker may then be placed in the aperture between the numerals 9 and 10 and the other marker 24 may be placed in the aperture between the numerals 18 and 19 to secure the segment 34 in the space between said numerals, as shown in Figure 1 of the drawings.

The markers 24—24 may be of several well known forms, but are herein shown as being split brass rivets having round heads. They are inserted through apertured portions of the segment 34 and in the desired apertures 23—23 and are then spread apart in a usual manner.

The outer disk 17 for the second six-month period of the year, like the disk 11, is divided along the window 16 into forty-one equal spaces and has a plurality of apertures 25—25 extending therethrough on the radial lines dividing said window into said spaces. Said disk also has markers 26—26 adapted to be detachably placed in the respective apertures in spaced-apart relation with respect to each other, depending upon the period of fertility of the individual female using the calendar. The markers 26—26 are also adapted to secure an indicating segment 36, like the segment 34, to the disk 17. The segment 36 may be transparent and may have a plurality of arrows 37—37 thereon, indicating the days of ovulation of the female during the conception period.

In determining the days of the month in which a woman is fertile by the calendar of my invention, after the brass markers 24—24 and 26—26 have been placed in the required apertures indicating the fertile period of the individual female for which the calendar is suited, preferably by the woman's physician, and the segments 34 and 36 have been secured to the respective disks, the day of the month upon which menstruation occurs is selected from the white numerals on the black background and the respective disk is turned until this day appears at the advance or left-hand edge of the window 12 in the concentric circle corresponding to the month upon which menstruation occurs. As for example, suppose menstruation begins May 31st. The numeral "31" appearing in white on the black background and within the same concentric circle as the month of May is placed under the numeral "1" on the window 12. The numbers "9" and "17" will then appear between the two radial lines marked by the markers 24—24. The arrows 35—35 of the segment 34 will show the period of ovulation as occurring during the 12th day of June and to and through the 16th day of June. This means conception can take place only between June 9 and June 17 and that the most likely period is during ovulation. Conception, therefore, cannot take place during all of the other days to the left of the marked interval and to the right of the same until the next menstrual period begins. In a like manner, in the event menstruation begins July 19, the number "19" appearing in white on the black background within the concentric circle for the month of July will be placed under the numeral "1" on the periphery of the window 16. The number "28" in white on the black background will be

moved to appear on the right of the left-hand marker **26**, while the number "5" in black on the white background will appear to the left of the right-hand marker **26**. The arrows **37—37** of the segment **36** will show the period of ovulation as occurring during the 31st day of July to and through the 4th day of August. This indicates that the period of fertility is between the 28th day of July and the 5th day of August and that the most likely period for conception to take place is during the period of ovulation. This also indicates that conception is not possible during all other days to the right and to the left of the marked intervals until the next menses begins.

It will be understood that modifications and variations may be effected without departing from the spirit and scope of the novel concepts of the present invention.

I claim as my invention:

1. In a calendar for indicating the days of fertility of females, two concentric disks, one of which is pivotally movable with respect to the other, one having a segmental window therein, and the other having sets of indications thereon facing said window, said indications comprising three sets of equally spaced numerals on said disk, one set representing the days of the month, another set representing the days of the next succeeding month, and the third set representing an initial number of days of a third month, and said one disk having indications spaced equally along said window and comprising consecutive numerals spaced equally therealong and representing the menstrual cycle, and an indicating segment mounted on said one disk along said window between certain numerals thereon, the space within said segment indicating the period of fertility of the individual female and also the period of ovulation of the female, said segment on said other disk indicating the days of the month of the fertile period upon the proper setting of said first disk with respect to said second disk.

2. In a calendar for indicating the days of fertility of females, two concentric disks, one of which is pivotally movable with respect to the other, one having a segmental window therein, and the other having sets of indications thereon facing said window, said indications comprising three sets of equally spaced numerals on said disk, one set representing the days of the month, another set representing the days of the next following month, and the third set representing an initial number of days of a third month, and said one disk having indications spaced equally along said window and comprising consecutive numerals spaced equally therealong and representing the menstrual cycle and being apertured intermediate each pair of said numerals, and two markers detachably mounted in certain of said apertured portions determined by the fertile period of the individual female and securing an indicating segment thereto indicating the period of ovulation of the female.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,942,754	Heyssler	Jan. 9, 1934
2,076,242	Marquis	Apr. 6, 1937