Aug. 8, 1950 J. B. LANCASTER 2,517,793

MENSTRUAL CYCLE INDICATING DEVICE

Filed March 10, 1947 2 Sheets-Sheet 1

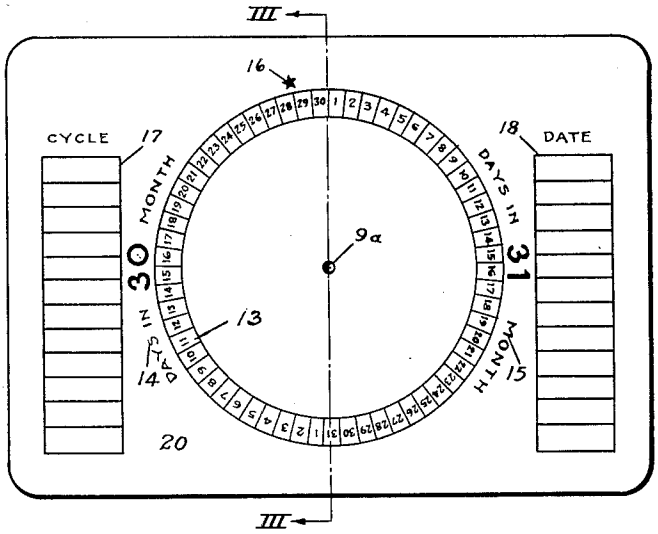


Fig. 2

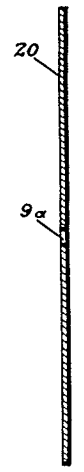


Fig. 3

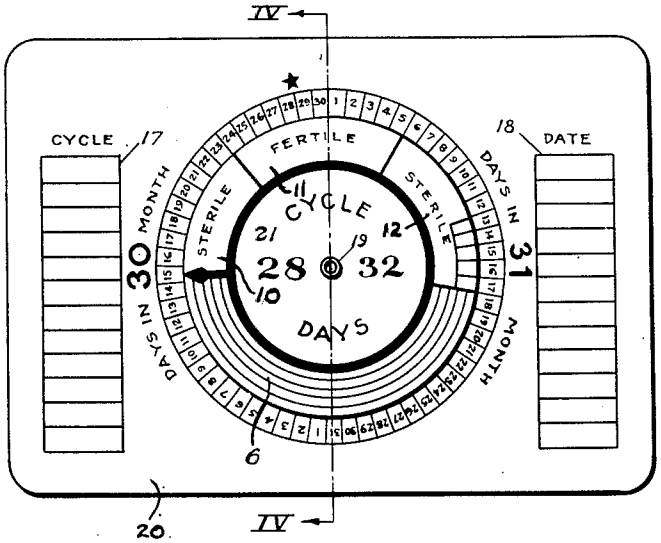


Fig. 1

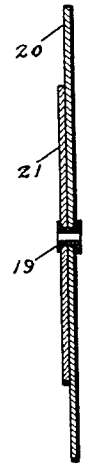


Fig. 4

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MENSTRUAL CYCLE INDICATING DEVICE

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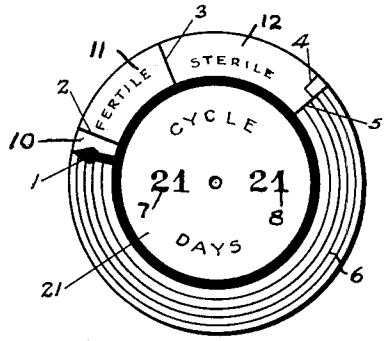


Fig. 5

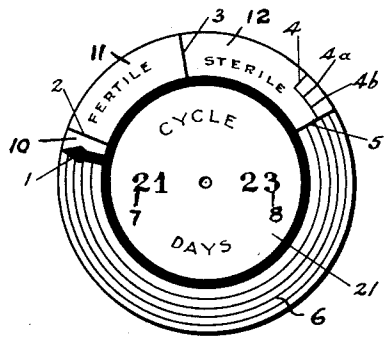


Fig. 6

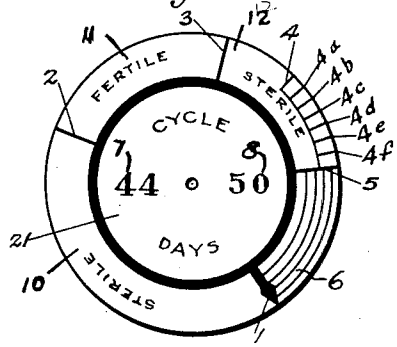


Fig. 7

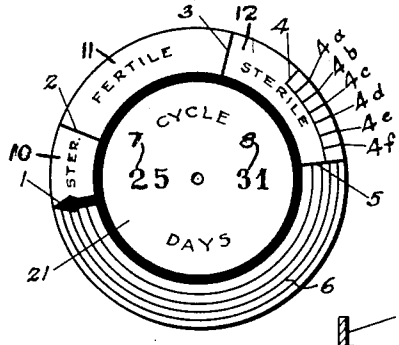


Fig. 8

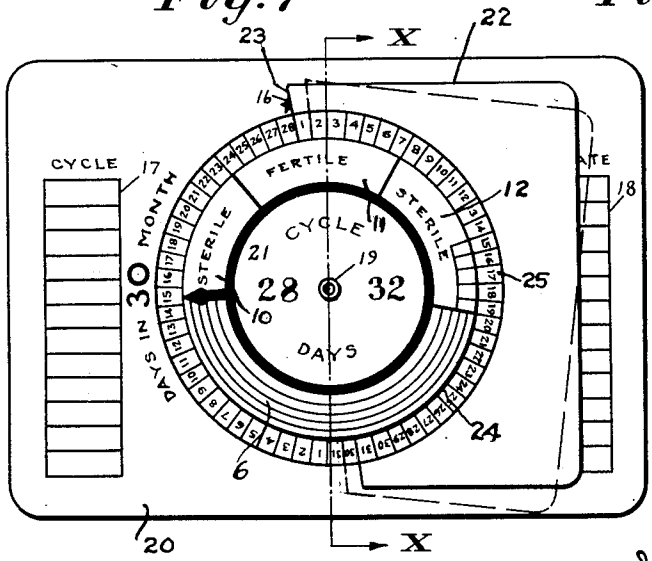


Fig. 9

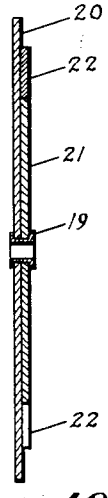


Fig. 10

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Patented Aug. 8, 1950

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UNITED STATES PATENT OFFICE

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MENSTRUAL CYCLE INDICATING DEVICE

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Application March 10, 1947, Serial No. 733,441

5 Claims. (Cl. 235—88)

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This invention relates to indicating devices, and more particularly to menstrual cycle indicating devices.

The menstrual cycle of women varies in length from 20 to 50 days, although the cycle of a particular individual within this range is usually of a more or less fixed time period with a variation in length which may be as much as 8 days.

The time when ovulation may occur is from fourteen to sixteen days before the commencement of the next menstrual cycle. The male sperm is active and effective for about 48 hours, and the ovum has a life span of from about six to twenty-four hours, with one day added at each end to accommodate observed variations, so that the possible fertile period covers a range of about 8 days for a regular cycle without any variation in length, and increases one day for each day of variation thereof. It has been ascertained that the maximum variation is 8 days.

Should the length of the cycle vary, the length of the fertile period will vary in like manner. The first day of the fertile period is thus taken as beginning nineteen days before the first day upon which the ensuing menstruation falls due, and ending on the twelfth day before the last day upon which the ensuing menstruation falls due.

The ordinary calendar months, with the exception of February, all have either 30 or 31 days.

It has heretofore been proposed to collate the variables for determining the fertile period, and various devices have been suggested for this purpose, but they are, in the main, so complicated as to prevent their use by any but very highly skilled persons, and even then with likelihood of error.

It is the principal object of the present invention to provide a menstrual cycle indicating device which is simple to operate, and which may be employed by the individual concerned to ascertain the various characteristics of her particular menstrual cycle.

It is a further object of the present invention to provide a menstrual cycle indicating device having a plurality of parts with a selection available of one of the parts, so that the calendar may be readily adapted for individual use.

It is a further object of the present invention to provide a menstrual cycle indicating device which is capable of utilization for either a fixed or a variable length of menstrual cycle.

It is a further object of the present invention to provide a menstrual cycle indicating device

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which may be cheaply and easily constructed, and which will be accurate and reliable in use.

Other objects and advantageous features of the invention will be apparent from the specification and claims.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is a top plan view of a preferred embodiment of a menstrual cycle indicating device in accordance with the present invention;

Fig. 2 is a top plan view of a plate employed in connection with the present invention;

Fig. 3 is a sectional view taken approximately on the line III—III of Fig. 2;

Fig. 4 is a sectional view taken approximately on the line IV—IV of Fig. 1;

Figs. 5 to 8, inclusive, are top plan views of discs or dials employed in connection with the calendar illustrated in Fig. 1;

Fig. 9 is a top plan view of the menstrual cycle indicating device showing the manner of using the same for a twenty-eight or twenty-nine day month; and

Fig. 10 is a sectional view taken on the line X—X of Fig. 9.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention.

Referring more particularly to the drawings, the menstrual cycle indicating device, in accordance with the present invention, includes a bottom or rear plate 20 of paper board, or of Celluloid or other suitable synthetic plastic sheet material. The plate 20 is preferably of substantially rectangular shape and may be provided along one side edge thereof with a space 18 for marking, in pencil, the date of the first day of menstruation, and may also have, as shown, a suitable identifying legend, such as "Date." The plate 20 may also be provided, preferably along the other side edge thereof, with a column 17 for recording, in pencil, the number of days in the menstrual cycles as they successively occur, and may also have, as shown, a suitable identifying legend, such as "Cycle."

The plate 20 is also provided with a circularly arranged row of indicia 13, divided into 61 equal parts, each of a day unit length, and the row of indicia includes two consecutive series of num-

bers, the first from "1" to "30," inclusive, and the second continuing therefrom from "1" to "31," inclusive, corresponding to the days of thirty and thirty-one day months. At the center of the circular row of indicia 13, an opening 9a is provided for purposes to be explained.

The first series of numbers from "1" to "30," inclusive, may be identified by a suitable legend 14, which is illustrated in the form "Days in 30 month," and the other series from "1" to "31," inclusive, may also be identified by a suitable legend 15 which, as illustrated, is in the form "Days in 31 month."

The plate 20 may also have adjacent the number "28," forming part of one of the circularly disposed series, a designation 16, shown as a star, for adapting the apparatus for use with the twenty-eight or twenty-nine day month of February.

The plate 20 is adapted to have mounted thereon a disc or dial 21, of paper board or of Celluloid or other suitable synthetic plastic sheet material, for rotation about the axis provided at the opening 9a. A rivet or other fastening device 19 capable of functioning as a pivotal axis is preferably inserted through an opening 9 at the center of the disc or dial 21 and through the opening 9a in the plate 20.

Each of the discs or dials 21 is preferably of a diameter such that is may be disposed with its peripheral edge in alinement with the inner edge of the circular row of indicia 13.

Each of the discs or dials 21 is provided with a circular central portion in which the identifying indicia 7, 8 for a particular disc may be disposed, and the peripheral edge portion thereof disposed outside the central portion 21 is divided into a plurality of related segments of different predetermined lengths, which are multiples of the unit length as hereinafter explained.

In Fig. 1 and Figs. 5 to 8, inclusive, discs or dials covering a variable range of cycles are illustrated.

Each of the discs or dials 21 is preferably provided with an indicating arrow 1 radially disposed, and which forms one boundary of a peripheral segment 10 of predetermined length about its peripheral edge, the segment 10 being bounded at its other edge by a radial line 2 which also serves as a boundary of another peripheral segment 11, also of predetermined length along its peripheral edge. The segment 11 is bounded along its other edge by a radial line 3 which also serves as a boundary of another peripheral segment 12, also of predetermined length along its peripheral edge. The segment 12 is bounded at its other end by another radial line 5. Spaced from the line 5 towards the line 3 are one or more blocks bounded by lines 4, 4a, 4b, 4c, 4d, 4e, and 4f, in accordance with the known variation in the cycle, the blocks each being of day unit length along their peripheries. The remaining peripheral segment 6 on the face of the disc or dial 21 may be provided with obliterating indicia for indicating that this portion of the disc or dial 21 is not being employed, and to indicate the necessity for resetting.

The segment 10 is employed for indicating a sterile part of the cycle and may bear suitable identifying indicia, the segment 11 is employed for indicating a probable fertile part of the cycle and may bear suitable identifying indicia, and the segment 12 is employed for indicating a sterile part of the cycle and may also bear suitable identifying indicia.

The manner of locating the arrow 1, the radial lines 2, 3 and 5, and the blocks defined by the lines 4, 4a, 4b, etc., in making the discs or dials 21, will now be pointed out, the discs or dials 21, as illustrated in Figs. 1 and 5 to 8, inclusive, being selected merely as illustrative.

The circumferential distance in day unit lengths corresponding to the equal parts of the circularly arranged row of indicia 13 between the arrow 1 and the radial line 5 represents the maximum number of days of the particular cycle, which is in the range or from twenty days to fifty days. The days of variation of the cycle are indicated by the provision of the necessary number of blocks defined by the lines 4, 4a, 4b, etc., with a maximum of eight blocks. The circumferential distance from the arrow 1 to the first of these blocks represents the minimum number of days of the cycle. The radial line 2 is located a day unit distance measured circumferentially corresponding to nineteen days from the line 4, and the radial line 3 is located a day unit distance measured circumferentially corresponding to twelve days from the radial line 5.

In Fig. 5, a disc or dial 21 is illustrated for a twenty-one day cycle with the peripheral segment 10 one day unit in length plus the first day of menstruation, with the peripheral segment 11 eight day units in length, and with the peripheral segment 12 twelve day units in length including the first day of the next menstruation.

In Fig. 6, there is illustrated a disc or dial 21 for a cycle twenty-one to twenty-three days in length, the peripheral segment 10 being one day unit in length plus the first day of menstruation the peripheral segment 11 being ten day units in length, and the peripheral segment 12 being twelve day units in length including the first day of the next menstruation, and being provided with three blocks, defined by the lines 4, 4a and 4b, to accommodate the variation of length in the cycle.

In Fig. 7, there is illustrated a disc or dial 21 for a cycle forty-four to fifty days in length, the peripheral segment 10 being twenty-four day units in length plus the first day of menstruation, the peripheral segment 11 being fourteen day units in length, and the peripheral segment 12 being twelve day units in length, including the first day of the next menstruation and being provided with seven blocks, defined by the lines 4, 4a, 4b, 4c, 4d, 4e and 4f, to accommodate the variation of length in the cycle.

In Fig. 8, there is illustrated a disc or dial 21 for a cycle twenty-five to thirty-one days in length, the peripheral segment 10 being five day units in length plus the first day of menstruation, the peripheral segment 11 being fourteen day units in length, and the peripheral segment 12 being twelve day units in length including the first day of the next menstruation, and being provided with seven blocks, defined by the lines 4, 4a, 4b, 4c, 4d, 4e and 4f, to accommodate the variation of length in the cycle.

The disc or dial 21 shown in Figs. 1 and 9 is for a cycle twenty-eight to thirty-two days in length, the peripheral segment 10 being eight day units in length plus the first day of menstruation, the peripheral segment 11 being twelve day units in length, and the peripheral segment 12 being twelve day units in length including the first day of the next menstruation, and being provided with five blocks, to accommodate the variation of length in the cycle, the reference numerals being omitted in the interest of clarity,

In Figs. 9 and 10, there is shown a masking sheet or plate **22** which is employed in connection with twenty-eight or twenty-nine day months, and which is provided with a locating edge **23**, and an arcuate edge **24** adapted to be arranged contiguous to the edge of the disc **21**. The sheet or plate **22** is provided with arcuately disposed indicia **25**, comprising the series of blocks each of a day unit length, similar to the indicia **13** and containing the consecutive numbers from "1" to "31". The sheet or plate **22** is adapted to be placed above a portion of the indicia **13**, as hereinafter explained, so that the indicia **25** are substituted for a portion of the indicia **13**.

The mode of operation will now be pointed out.

With the proper disc or dial **21** conforming to the particular individual menstrual cycle mounted on the plate **20** by means of the fastener **19**, the indicating device is ready for use. The disc or dial **21** is rotated about the pivotal axis provided by the fastener **19** to position the arrow **1** with respect to the particular block of the indicia **13** corresponding to the day of the first day of menstruation of the proper month of 30 or 31 days. This positions the segments **10**, **11** and **12** with respect to contiguous portions of the indicia **13** to indicate the respective sterile and fertile parts of the cycle, and with the line **5** indicative of the latest date of beginning of the next cycle. The blocks defined by the lines **4**, **4***a*, **4***b*, etc., are indicative of the variations in a cycle, where variations occur, the line **4** thus giving an indication of the earliest possible date of beginning of the next cycle.

In Fig. 1, the disc or dial **21** is shown with the arrow arranged to point to "**15**", indicating the 15th day of a thirty day month, and this indicates that the interval to the 23rd of that month is a sterile part of the cycle, the interval from the 24th day of that month to the 5th day of the following month is the probable fertile part of the cycle, and that the interval from the 6th to the 17th is the sterile part of the cycle, with the beginning of the next cycle indicated as the 13th and the last day of beginning as the 17th.

It will be clear that for a thirty-one day month, the other portion of the indicia **13** and shown on the right hand side would be utilized.

While it is possible, by counting, to utilize the indicating device in connection with a twenty-eight or twenty-nine day month, the masking sheet or plate **22** is preferably employed, as illustrated in Fig. 9, with its locating edge arranged at the star **16**, if the particular February is a month of twenty-eight days. The indicia **25** is thus substituted for a portion of the indicia **13** and a direct reading may be obtained in part from the plate **20**, and in part from the plate **22**. In the event that February has twenty-nine days, then the sheet or plate **22** may be shifted to the position indicated in broken lines on Fig. 9 and utilized in a similar manner.

The columns **17** and **18** may be employed for recording the beginning date of the cycle and the actual length of the cycle.

I claim:

1. A menstrual cycle indicating device comprising a plate of sheet material having a plane ring thereon equally divided radially into sixty one divisions corresponding consecutively to the number of days in two calendar months of thirty and thirty-one days and indicia identifying each of said days, and a disc of sheet material pivotally mounted with respect to said plate, said disc

having a peripheral edge portion inwardly disposed with respect to said indicia and said edge portion being divided into segments corresponding in sequence and length to at least one of the phases of an established menstrual cycle.

2. A menstrual cycle indicating device comprising a plate of sheet material having a plane ring thereon equally divided radially into sixty one divisions numbered consecutively from "1" to "30" and "1" to "31" corresponding to the number of days in two calendar months each following the other, and a disc of sheet material pivotally mounted on said plate in said ring, said disc having a peripheral edge portion inwardly disposed with respect to said indicia, said edge portion being divided into segments corresponding in sequence and length to phases of an established menstrual cycle, and one of said segments corresponding to a probable fertile phase of said cycle.

3. A menstrual cycle indicating device comprising a plate of sheet material having a plane ring thereon with its circumference equally divided radially into sixty one divisions corresponding to the number of days in two calendar months of thirty and thirty-one days and identifying indicia for each of said days in said divisions, and a disc of sheet material pivotally mounted on said plate in said ring, said disc having a peripheral edge portion divided into segments corresponding in sequence and length to phases of an established menstrual cycle, one of said segments corresponding to an initial sterile phase of the cycle, another of said segments corresponding to a probable fertile phase of said cycle, and another segment corresponding to another sterile phase of said cycle.

4. A menstrual cycle indicating device comprising a plate of sheet material having a plane ring thereon equally divided radially into sixty one divisions corresponding to the number of days in two calendar months of thirty and thirty-one days and indicia identifying each of said days, a disc of sheet material pivotally mounted with respect to said indicia, said disc having a peripheral edge portion contiguous to said indicia and divided into segments corresponding in sequence and length to phases of an established menstrual cycle in the same units as said first mentioned indicia, and a masking plate adapted to be disposed in superimposed relationship with respect to a portion of the day indicia on said plate, and having circularly disposed indicia thereon consecutively identified from "1" to "31" for alinement with the segments of said disc and in sequential arrangement with respect to the terminal day indicia on the plate for a month of less than thirty days.

5. A menstrual cycle indicating device comprising a plate of sheet material having a plane ring thereon equally divided radially into sixty one divisions corresponding to the number of days in two calendar months of thirty and thirty-one days and identifying indicia thereon consecutively identified from "1" to "30" and from "1" to "31," a disc of sheet material pivotally mounted with respect to said indicia, said disc having a peripheral edge portion contiguous to said indicia and divided into segments corresponding in sequence and length and in the same units as said first mentioned indicia to phases of a specific menstrual cycle of established length, and a masking plate adapted to be disposed in superimposed relationship with respect to a portion of the day indicia on said plate, and having cir-

cularly disposed indicia thereon consecutively identified from "1" to "31" for alinement with the segments of said disc and in sequential arrangement with respect to the terminal day indicia on the plate for a month of less than thirty days.

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