

April 18, 1961

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2,979,884

MENSTRUAL CYCLE INDICATING MECHANISM

Filed July 14, 1958

3 Sheets-Sheet 1

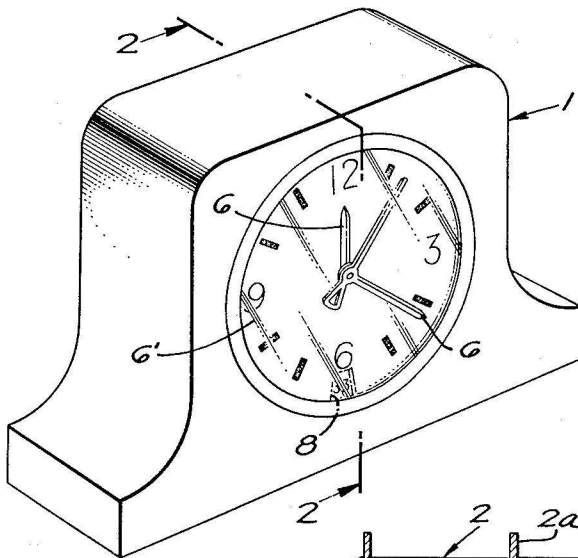


FIG. 1.

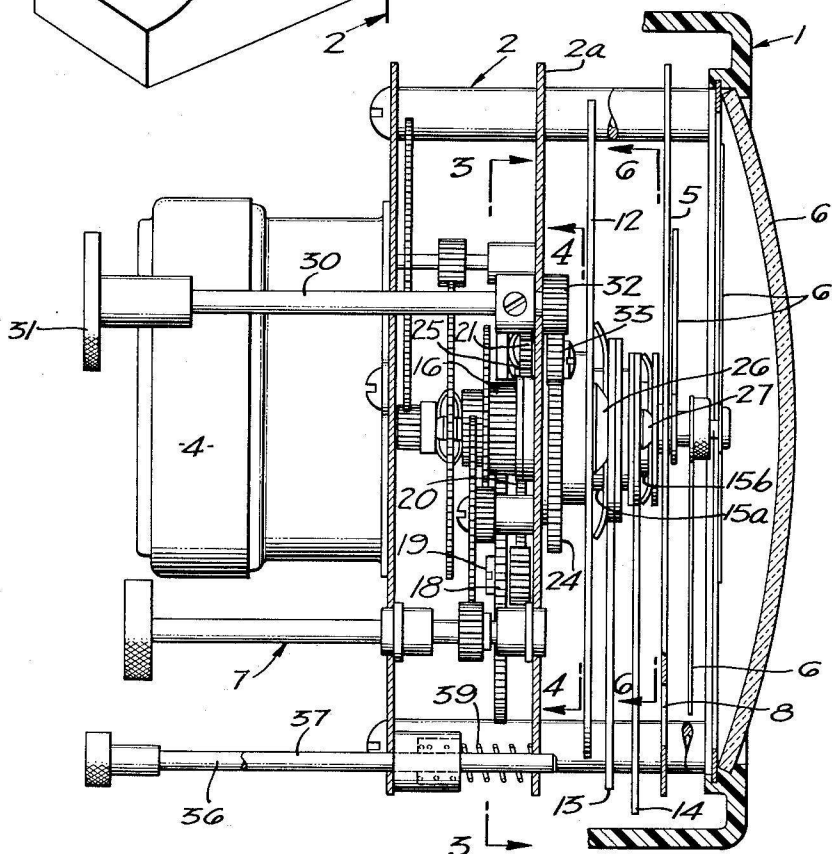


FIG. 2.

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3 Sheets-Sheet 2

FIG. 3.

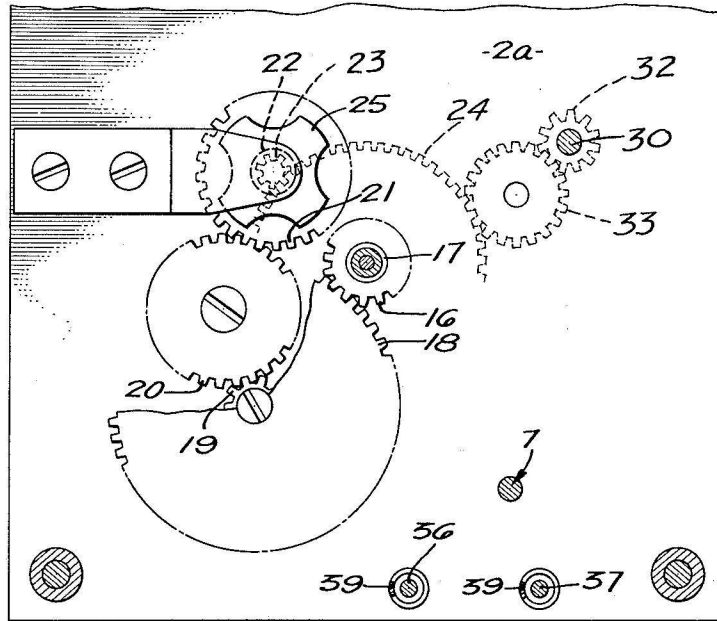


FIG. 4.

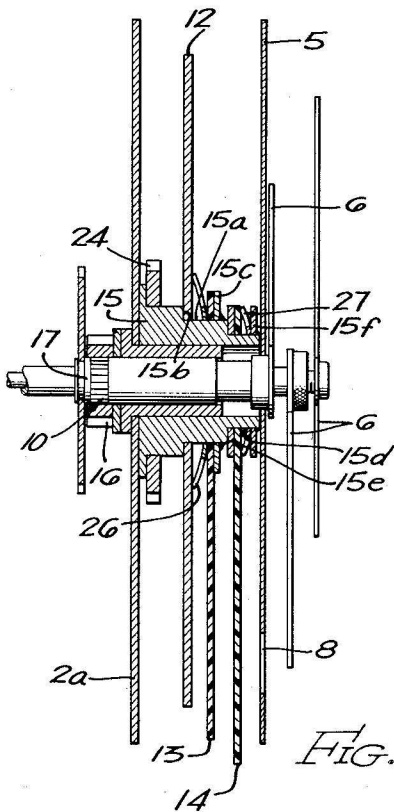
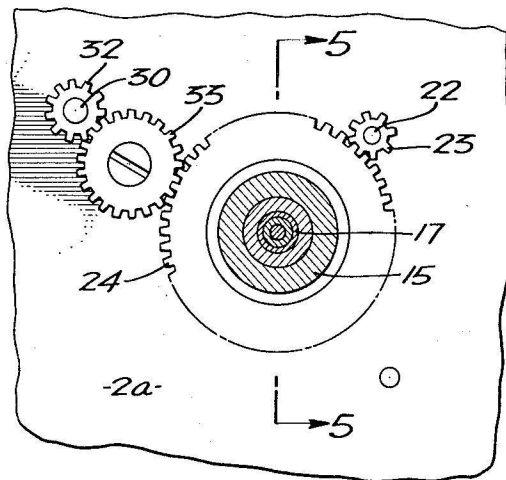


FIG. 5.

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3 Sheets-Sheet 3

FIG. 6.

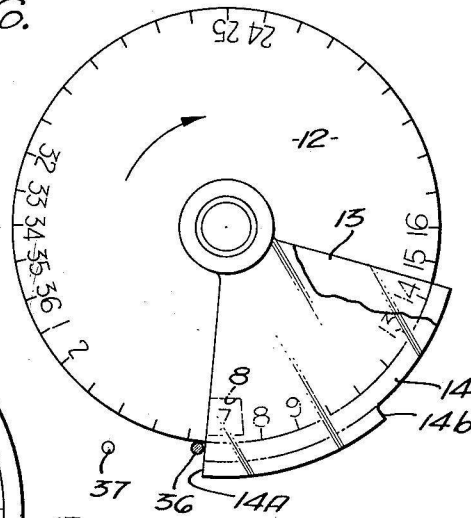


FIG. 7.

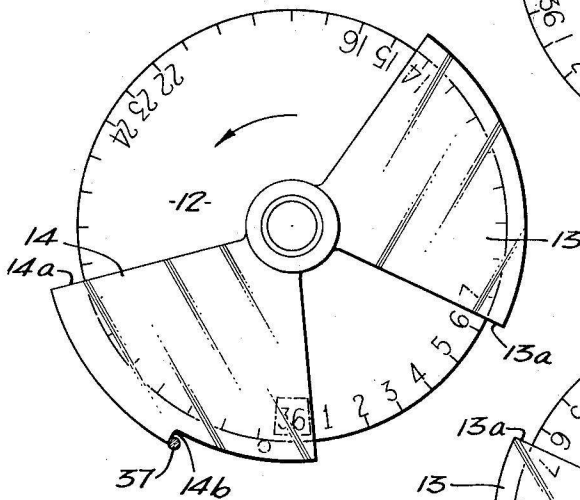


FIG. 9.

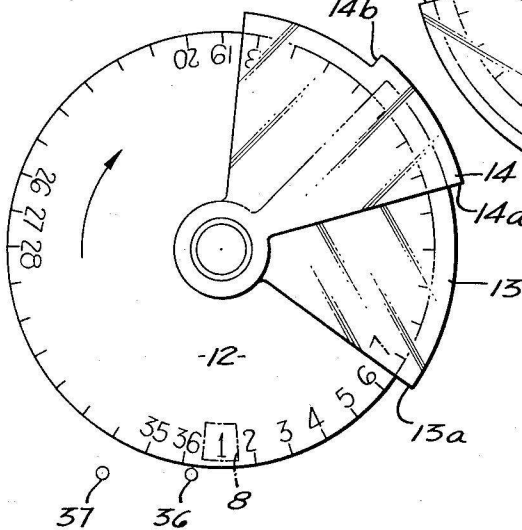
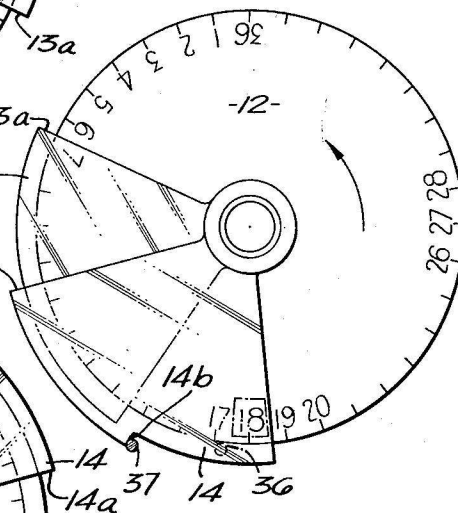


FIG. 8.



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1

2,979,884

## MENSTRUAL CYCLE INDICATING MECHANISM

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Filed July 14, 1958, Ser. No. 748,261

19 Claims. (Cl. 58—5)

The invention relates to mechanism which will enable women to keep accurate account of ovulation and menstrual periods.

It is an object of this invention to provide mechanism such as described which reliably may be operated by an electric clock or a spring operated clock to indicate on the clock face the times and extent of menstrual and ovulation periods.

It is another object of this invention to provide signalling mechanism such as described which readily may be manually set to suit the particular woman's menstrual cycle and thereafter actuated to indicate the times of ovulation and other significant data relating to the cycle.

It is a further object of this invention to provide novel mechanism of the character described which, when set in accordance with the estimated ovarian cycle of the particular woman, will enable the woman to be apprised of the following information:

(1) The interval of time which elapses between the menstrual periods, and where such intervals are of varying length, the extent and pattern of such irregularity.

(2) The probable day of the onset of a menstrual period with requiring a computation based upon the varying number of days in calendar months.

(3) The number of days, from day to day, which have passed since the first day of the last menstrual period without requiring any computation after proper setting of the mechanism.

(4) The determination in advance of the next onset of the menstrual period, as to when ovulation has taken place.

(5) The interval between menstrual periods when the particular woman is fertile or infertile.

(6) The period of time best suited for conception.

A further object of this invention is to provide clock operated signalling mechanism such as described wherein signalling means including a novel arrangement of simply constructed signalling members, manually operable setting means for such members, including manually operable stop means, and a gear train for driving the signalling members from the clockworks, provide the objects and advantages hereof in a particularly efficacious manner.

It is a further object of the present invention to provide signalling mechanism such as described which is operable in consideration of the passage of any selected number of 24-hour days without depending upon the calendar and is subject to efficient use according to any of a number of theories such as may be recommended by physicians to suit particular women.

Other objects and advantages of the invention will be

2

hereinafter described or will become apparent to those skilled in the art and the novel features of the invention will be defined in the appended claims.

Referring to the drawings:

Fig. 1 is a perspective view of mechanism of the present invention as embodied in a clock;

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1;

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

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2;

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 2;

Fig. 7 is a sectional view similar to Fig. 6 with parts of the mechanism in a different position than in Fig. 6;

Fig. 8 is a sectional view corresponding to Fig. 6, with parts in a different position than shown in Figs. 6 and 7; and

Fig. 9 is a sectional view corresponding to Fig. 6 with parts adjusted to a different position than shown in Figs. 6, 7 and 8.

The embodiment of this invention as shown in the accompanying drawing is incorporated with an electrically operated clock, but it is to be understood that the signalling mechanism of this invention constitutes a unit that may be operated by any suitable timing means or in fact manually, inasmuch as this invention is deemed to include the signalling unit arranged so that it may be actuated in properly timed relation manually or otherwise.

The electrically operated clock here shown as one example of timing means that may be employed for actuating the signalling unit of the present invention, is conventional and includes the usual housing 1, frame 2, clockworks 3, electric motor 4, dial 5, hands 6, transparent clock face 6' and setting means 7 for the hands.

In accordance with this invention, signalling means comprising elements to be hereinafter more fully described, are mounted to rotate about the hour hand and minute hand shaft assembly of the clockworks so that signalling indicia on the signalling elements will be visible through an opening or window 8 formed in the dial 5 of the clock, there being a gear train also to be hereinafter described, driven by the clockworks so as to move the signalling elements in properly timed relation to present signals at prescribed times.

In association with the signalling means and the clock are manually operable setting means operable as will be hereinafter described to set the signalling elements in predetermined relative positions for making prescribed signals at predetermined times.

But little change in the construction of a conventional clock is required to embody the signalling means of the invention therein for operation by the clock. It is only necessary to provide adequate space between the clockworks frame 2 and the rear face of the clock dial 5 to accommodate the signalling element.

The formation of the window 8 in the dial 5, the provision of mounting means on the main shaft assembly 16 of the clock for supporting the signalling elements, and the addition of a simple gear train and the manually operable setting means for the signalling elements, do not require reconstruction or material changes of the arrangement of elements of the clock.



As here shown, the signalling elements include a circular disk 12 and two disk segments 13 and 14 disposed in axially spaced relation to one another between the clockworks frame 2 and the dial 5 so that portions thereof will be visible through the dial window 8.

As shown in Fig. 5, an arbor 15 is mounted on the shaft assembly 10 of the clock for supporting and driving the disks 12, 13 and 14, the arbor being supported to rotate freely on the shaft assembly 10 and adapted to be driven by a gear train which is added to the clockworks in accordance with this invention. This gear train includes, as shown in Fig. 3, a drive pinion 16 driven by the hour shaft 17 of the shaft unit 10 of the clock and which in turn drives the gears 18, 19, 20 and 21, suitably supported on the rear side of the wall 2a of the frame 2. The gear 21 drives a shaft 22 journaled in the wall 2a. As shown in Fig. 4, the shaft 22 drives a pinion 23 on the opposite side of the wall 2a. The pinion 23 drives a gear 24 fixed to the arbor 15. A spring clutch member 25 is operatively disposed between shaft 22 and gear 21 and constitutes a friction drive means for driving shaft 22 and consequently pinion 23, upon rotation of gear 21. This friction drive means provides for the pinion 23 driving the gear 24 when the gear 21 is driven by the clockworks but makes it possible for the pinion 23 to be driven relative to the gear 21 upon rotation of pinion 23 when setting the signalling disks in the manner hereinafter described.

Provision is also made for a friction drive of the signalling disks 13 and 14. As shown in Fig. 5, the disk 12 and the disk segment 13 are mounted on a reduced portion 15a of the arbor 15 between a shoulder 15b and a stop ring 15c fixed to the arbor. The disk 12 is mounted so as to rotate with the arbor 15, and to frictionally drive the segment 13 through a spring member 26 mounted on the arbor and frictionally engaged with opposed faces of the disks 12 and 13 respectively. This spring member 26 urges the disk 12 against the shoulder 15b and the disk segment 13 against the stop ring 15c, thereby serving as a frictional driving medium between the disk 12 and the disk segment 13. This arrangement makes it possible to rotate the arbor 15 and disk 12 relative to the disk segment 13 as required in setting the disks in a manner to be hereinafter described.

The other disk segment 14 is mounted on a reduced portion 15d of the arbor 15, between a shoulder 15e on the arbor and a stop ring 15f fixed to the arbor, there being a spring 27 arranged on the arbor to provide a friction drive between the disk 14 and the arbor, in the same manner as the spring member 26, whereby the arbor 15, disk 12 and disk segment 13 may be rotated relative to the disk segment 14 in setting the disks, as will be hereinafter described.

As shown in Figs. 6-9, the circular signalling disk 12 is provided on its outer face adjacent the periphery thereof with signalling indicia. In this instance, the indicia comprises the numerals "1" through "36" equidistantly spaced and consecutively arranged so that one numeral at a time will be visible through the dial window 8. These numerals represent any consecutive number of 24 hour days in the signalling system provided by this mechanism.

The gear ratio of the gear train driven as hereinbefore described by the clockworks, is such that the disk 12 will be rotated at a rate to show a different one of the "36" numbers thereon at the dial window 8, each 24 hour day during operation of the clock.

The signalling disk segments 13 and 14 as here shown are of like size, each being dimensioned to cover 8 of the numerals on the disk 12, although if desired the size of these disks may be varied if a lesser or greater number of numerals are to be covered per disk. In order that the numerals on the disk 12 be visible at the window 8 through the disk segments 13 and 14, the latter are transparent and of different appearance from one another so as to be distinguished one from the other

and the disk 12. As here shown this is accomplished by having the disks 12, 13 and 14 of different colors, the disk 12 for example being white and the disk segments 13 and 14 of a different reddish hue.

It is desired that the disk segments 13 and 14 be adjusted, as shown in Fig. 6, to lie one over the other in matched relation to one another so as to overlies eight of the consecutive numerals on the disk 12. Also it is desired that these disks be relatively moved as indicated in Figs. 8 and 9, to overlies more than eight of the numerals on the disk 12. As many as 16 consecutive numerals may be covered by the two disk segments when the latter are in maximum relative adjustment with adjacent edges substantially disposed on a common radial plane.

The relative adjustment of the disks 12, 13 and 14 is effected by setting means which includes, as shown in Figs. 2 and 4, a setting shaft 30 rotatably mounted on the clock frame 2 and operable on the back of the clock by means of a knurled handle 31. This setting shaft rotates a pinion 32 which through a gear 33 on the wall 2a of the clock frame 2 drives the arbor carried gear 24. Rotation of the arbor 15 as a result of rotation of the setting shaft 30 will cause the disks 12, 13 and 14 to be rotated in unison, while friction drive spring 25 enables the resultant relative rotation of shaft 22 and gear 21 which is constantly driven through gears 16, 18, 19 and 20.

If, while facing the front of the clock, the person seeking to set the disks 12, 13 and 14, rotates the shaft 30 in a clockwise direction, the disks are also rotated in a clockwise direction. Counterclockwise rotation of this shaft likewise effects a counterclockwise rotation of the signalling disks. During this rotative movement of the arbor-carried gear 24, the driving pinion 23 operated by the clockworks, turns freely relatively to the gear 21 on the shaft 22 by reason of the friction drive spring 25 previously described.

Since all of the disks 12, 13 and 14 turn with the arbor 15 during a setting operation, it is necessary to effect relative movement between these disks to set them as desired. Accordingly, stop means are provided as a part of the setting means, for selectively stopping rotation of disk segments 13 and 14. This stop means as shown in Figs. 2 and 6, includes a pair of stop plungers 36 and 37 slidably supported by the clock frame 2 for movement into position to arrest movement of the disk segments 13 and 14. Each plunger is normally disposed in retracted position, as shown in Fig. 2, by means of the spring 39 confined on the plunger between the wall 2a and a spacer sleeve 39' which latter abuts the rear wall 2b of the clock frame 2. With this arrangement the plungers 36 and 37 must be held in depressed or inwardly extended position in the manner hereinafter described when turning the setting shaft 30 to set the disk segments 13 and 14. The springs 39 will retract the plungers 36 and 37 upon release of the plungers by the operator.

The stop plunger 36 is nearer to the shaft assembly 10 about which the disk segments 13 and 14 are rotatable and when depressed, will present the inner end thereof in position to be engaged by the left hand radial edges 13a and 14a of both segments when these segments are rotated in a clockwise direction. The location of the plunger 36 with relation to the dial window 8 is such that when the disk segment edges 13a and 14a abut the plunger, they are visible at the window, thereby readily making it possible for the operator to ascertain that the segments lie one completely over the other in matched relation, as shown in Fig. 6. While the segments 13 and 14 are held in this manner against clockwise rotation by the plunger 36, continued turning of the setting shaft 30 in a clockwise direction will cause the circular disk 12 to rotate in a clockwise direction. As a result of this continued rotation of disk 12 any of

5

the numerals thereon may be brought into view at the window 8. This will provide for the setting of the edges 13a and 14a of disk segments 13 and 14 in fixed relation to a selected numeral on the disk 12 so that the operator is then aware that the seven other of the numerals disposed consecutively to the right of the visible numeral will be covered by the disk segments 13 and 14.

The disk segment 14 is outermost of the disk segment 13, being provided with a peripheral shoulder 14b adapted to engage the stop plunger 37 when the latter is depressed. The plunger 37 is located to one side of the plunger 36 and in such a position that when depressed and so held while the plunger 36 is retracted, and before rotating the arbor 15 and disks 12, 13 and 14 in a counterclockwise direction, the inner end of the plunger 37 will be disposed to be engaged by the shoulder 14b thereby arresting the counterclockwise rotation of the disk 14. When the disk segment 14 is arrested in this manner the previous setting of the disk segment 13 is not disturbed, since the plunger 37 is not in the path of disk segment 13 and the spring friction drive member 26 will hold the disk segment 13 against turning relative to the disk 12. Consequently continued counterclockwise rotation of disk 12 and segment 13 relative to the arrested disk segment 14 may take place to cause the disk segment 13 to be moved relative to disk segment 14 to any extent so that more than the original 8 numerals, up to 16 of the numerals, may be consecutively covered by the two disk segments.

If the two disk segments 13 and 14 have been set as shown in Fig. 6, to overlie, for example, the eight consecutive numerals "7" through "14" on the disk 12, and it is desired to effect an adjustment so that the two disk segments will overlie twelve of the numerals reading consecutively from "7" through "18" then the aforesaid counterclockwise rotation of the disk 12 and segments 13 and 14 to arrest the segment 14 by means of the plunger 37 is carried out. When the disk segment 14 is restrained or arrested by the plunger 37, the counterclockwise rotation of disks 12 and 13 is continued until the disk 12 has been moved sufficiently to bring the numeral "18" thereon into view at the window under the edge portion 14a of the disk segment 14. When this takes place the operator knows that the two colored disk segments 13 and 14 are positioned to overlie the twelve numerals "7" through "18."

It should be borne in mind that the two colored disk segments 13 and 14 may be set to cover 8 consecutive numerals on the disk 12 or any additional number up to 16 consecutive numbers and that at the appropriate time, according to the setting of the disk 12 to reveal a particular numeral, one of these numerals covered by the colored disk segments will be revealed each 24 hour day.

The mechanism of this invention may be adjusted and operated according to any recognized rhythm cycle theory suited to the particular woman. A calendar need not be depended upon, since all significant uses of the mechanism may be based upon a visual signal being automatically presented each 24 hour day of any predetermined number of consecutive days, according to the setting of the mechanism.

As an example of one use of the mechanism of this invention, it is assumed that the menstrual cycle of a particular woman according to a recognized or prescribed rhythm cycle theory or formula, indicates that her fertile period is between cycle days "7 and 18." Accordingly, the mechanism is set by depressing the stop plunger 36 and then turning the setting shaft 30 to rotate the disk 12 and disk segments 13 and 14 in a clockwise direction until the left hand edge portion of the two segments 13 and 14 appear at the window 8. At this time the plunger 36 arrests clockwise rotative movement of the segments 13 and 14 but does not interfere with continued clockwise rotation of disk 12. This setting disposes the disk segments 13 and 14 in matched overlying relation to one

6

another so as to cover eight numerals on the disk 12. At this time however, clockwise rotation of the disk 12 is continued until the numeral "7" appears in the window 8 under the left hand edge portions of the disk segments 13 and 14. Next, the plunger 36 is released and the plunger 37 is depressed while turning the shaft 30 to rotate the disk 12 and segments 13 and 14, in a counterclockwise direction. This counterclockwise rotation is continued to bring the shoulder 14b on the disk segment 14 against the plunger 37 and thereby arrest counterclockwise movement of segment 14. Further counterclockwise movement of the disk 12 and segment 13 is now necessary to set the segment 13 so that in combination with segment 14, the required number of numerals on the disk 12 will be covered. During this further counterclockwise rotation, the disk 12 and segment 13 are moved relative to the arrested disk segment 14, it being necessary usually to effect more than one complete revolution of the disk 12 and segment 13 to dispose the numeral "18" opposite the then right hand edge of the disk segment 13 at the window 8, thereby completing the setting suited to the particular woman's rhythm cycle.

Having set the mechanism as above described, the user on the first day of her menstrual period sets the disk 12 to reveal the numeral "1" at the window 8. Since the plungers 36 and 37 are in retracted position and do not interfere with joint rotation of the disk 12 and segments 13 and 14, the segments 13 and 14 remain in the previously set position covering in this instance the twelve fertile days according to the cycle, while setting the disk 12 to show the numeral "1."

Each 24 hour day of this setting, a different numeral appears at the window 8. When the numeral 7 appears, it shows up in a different color than the numeral which appeared the preceding day, and this indicates to the user the beginning of her fertile days. Each day during this period up to the twelfth day a new colored signal appears at the window 8, until on the thirteenth day, the uncolored or white numeral 19 appears and this indicates the beginning of the non-fertile days in the cycle.

It is now apparent that the mechanism of this invention is subject to efficient use by women whose menstrual cycle varies from the usual 28 day pattern, for example, between 26 and 30 or more days, inasmuch as the operation of the mechanism does not depend upon calendar computation, but on the passage of any predetermined number of cycle days and is therefore adaptable to use according to any cycle variance once the latter is determined.

It should be noted that the use of the two disk segments 13 and 14 in accordance with this invention renders the mechanism desirably flexible for accurate use by women whose menstrual cycle is such that the fertility period is greater than eight days. However, in instances where the fertility period is no more than eight days, then only one stop member, such as the stop member 36, need be operated to set the mechanism for indicating the fertility period. In the present form of this invention where the two segments 13 and 14 are arrested by the stop plunger 36, as hereinbefore noted, the two segments will serve as a single signal for covering the eight numerals.

I claim:

1. In indicating mechanism of the character described: a main signalling member having signal characters thereon; means rotatably mounting said member; means providing a window through which said characters are visible; signal means; means mounting said signal means for rotation adjacent said main member; said signal means having a transparent portion through which are visible at said window during each revolution of said main member a predetermined number of said characters less than the total number on said main member; said transparent portion having an appearance such that those of

the characters visible therethrough are distinguished in appearance from the other of said characters; a frictional drive connection between said main member and said signal means providing for rotation of said signal means with said main member upon rotating the latter; said drive connection permitting said main member to be rotated relative to said signal means when said signal means is held against rotation; stop means movable into and from a position for engaging said signal means and stopping movement thereof relative to said signalling member; and means for so moving said stop means.

2. In indicating mechanism for the purpose described: a main signalling member having signal characters thereon; means rotatably mounting said member; means providing a window through which said characters are visible one at a time; signal means; means mounting said signal means for rotation adjacent said main member; signal means including a disk having a transparent portion for overlying a predetermined number of said characters less than the total number of said characters; said transparent portion having an appearance such that those of the characters visible therethrough at said window are rendered distinct in appearance from the remainder of said characters; friction drive means operable to rotate said disk with said main member upon rotating the latter and to permit said main member to rotate relative to said disk when said disk is held against rotation; setting means for rotating said main member; stop means movable into and from a position for engaging said signal means and stopping movement thereof relative to said signalling member; and means for so moving said stop means.

3. In indicating mechanism for the purpose described: a main signalling member having signal characters thereon; means rotatably mounting said member; means providing a window through which said characters are visible one at a time; signal means rotatable about the axis of said main member; said signal means including a pair of disks each having a transparent portion for overlying a predetermined number of said characters less than the total number of said characters; said transparent portions having an appearance such that those of the characters visible therethrough at said window are distinct in appearance from the other of said characters; friction drive means operable to rotate both disks with said main member upon rotation of the latter and to permit the main member to rotate relative to said disks when said disks are held against rotation; a first stop means operable to releasably hold both disks against rotation; and a second stop means operable to releasably hold one of said disks against rotation while the other disk and said main member are rotated.

4. In indicating mechanism for the purpose described: a main signalling member having signal characters thereon; means rotatably mounting said member; means providing a window through which said characters are visible one at a time; signal means rotatable about the axis of said main member; said rotatable signal means including a pair of disks each having a transparent portion for overlying a predetermined number of said characters less than the total number of said characters; said transparent portions having an appearance such that those of the characters visible therethrough at said window are distinct in appearance from the other of said characters; friction drive means operable to rotate both disks with said main member upon rotation of the latter and to permit the main member to rotate relative to said disks when said disks are held against rotation; setting means for effecting rotation of said disks; a first stop means operable during joint rotation in one direction of said main member and said disks, to releasably arrest rotation of both of said disks; and a second stop means operable after release of said main member and disks by said first stop means and during rotation of said main member and said disks in the opposite direction to releasably arrest rotation of but one of said disks.

5. Indicating mechanism for the purpose described comprising: a main signalling disk having signal characters thereon; means rotatably mounting said disk; means providing a window through which said characters are visible one at a time; a pair of disk segments rotatable on said mounting means in axially spaced relation to one another and said main disk; said segments having transparent portions through which are visible at said window characters on said main disk during a portion of each revolution of the main disk; said transparent portions of said segments having an appearance such that the characters visible therethrough are distinguished from the other of said characters; friction drive means between said main disk and said segments providing for joint rotation of said main disk and segments; said friction drive means providing for rotation of the main disk relative to said segments when either or both of the latter are held against rotation; setting means for rotating said segments and said main disk; a first stop means operable to hold both segments against rotation; and a second stop means operable to hold but one of said segments against rotation.

6. Clock operated menstrual cycle indicating mechanism comprising: a clockworks; a main member having signal characters thereon; means in said clockworks rotatably mounting said main member; drive means operatively connected with said clockworks for rotating said main member at a predetermined rate; means providing a window through which said characters are visible one at a time during rotation of said main member; signal means rotatable in said clockworks; said signal means having a transparent portion for overlying a predetermined number of said characters less than the total number of said characters; said transparent portion having an appearance such that those of said characters visible therethrough are rendered distinct in appearance from the other of said characters; friction drive means between said main member and said signal means providing for joint rotation of said main member and said signal means as well as for rotation of said main member relative to said signal means when the latter is held against rotation; setting means operable to rotate said main member and said signal means; stop means operable to releasably hold said signal means against rotation during rotation of said main member by said setting means; said stop means including a plunger movable into and out of the path of movement of said signal means; and means for so moving said plunger.

7. Clock operated menstrual cycle indicating mechanism comprising: a clockworks; a main disk having signal characters thereon; means mounting said main disk for rotation on said clockworks; drive means operatively connecting said disk with said clockworks for rotating said disk at a predetermined rate; said drive means including means permitting said disk to be rotated relative to said drive means; means providing a window through which said characters are visible one at a time during rotation of said main disk; a pair of disk segments mounted to rotate about the axis of said main disk; said segments being axially spaced from one another and said main disk and movable to overlie one another and portions of said main disk; said segments each having a transparent portion through which are visible at said window a number of said characters less than the total number of said characters; said transparent portions being distinct in color from the color of said main disk; friction drive means connecting said segments with said main disk to provide for joint rotation of said segments and main disk as well as rotation of said main disk relative to said segments when the latter are held against rotation; setting means in said clockworks operable for rotating said main and segment disks; a first stop means operable to releasably hold both segments against rotation; and a second stop means operable upon release of said first stop means to hold but one of said segments against rotation.



8. Menstrual cycle indicating mechanism comprising: a main disk having a series of signal characters thereon representing a number of consecutive days; means rotatably mounting said disk; means providing a window through which said characters are visible during rotation of said disk; a disk segment mounted to rotate about said axis; drive means between said main disk and said segment providing for rotation of said segment with said main disk also for rotation of said main disk relative to said segment when the latter is held against rotation; said segment having a transparent portion distinct in appearance from said main disk and through which are visible at said window a number of the characters less than the total number thereof on the disk; the characters that are visible through said transparent portion representing fertile days of the particular woman for whom the mechanism is set; setting means operable for rotating said main disk and said segment; means for stopping rotation of said disk segment; means mounting said stopping means for movement into and out of position to releasably hold said segment against rotation whereby said setting means may be operated to rotate said main disk to selectively dispose a group of said characters in position to be viewed at said window through said transparent portion; and means for so moving said stop means.

9. Menstrual cycle indicating mechanism comprising: a main disk having a series of signal characters thereon representing a consecutive number of days; means mounting said disk for rotation about an axis; means providing a window through which said characters are visible during rotation of said disk; a disk segment mounted to rotate about said axis; friction drive means between said main disk and said segment providing for rotation of said segment with said main disk also for rotation of said main disk relative to said segment when the latter is held against rotation; said segment having a transparent portion distinct in appearance from said main disk and through which are visible at said window a number of the characters less than the total number thereof on the disk; the characters that are visible through said transparent portion representing at least the estimated number of fertile days of the particular woman for whom the mechanism is set; setting means connected with said main disk operable for rotating said main disk and said segment; a stop member; means supporting said stop member for movement into and out of position to releasably hold said segment against rotation whereby said setting means may be operated to rotate said main disk to selectively dispose a group of said characters in position to be viewed one at a time at said window through said transparent portion; means for so moving said stop member; and timed driving means operatively connected with said main disk for rotating said main disk and said segment at a rate such that a different signal character is made visible at said window every 24 hour day.

10. Menstrual cycle indicating mechanism comprising: a main disk having a series of signal characters thereon representing a consecutive number of days; means mounting said disk for rotation about an axis; means providing a window through which said characters are visible one at a time during rotation of said disk; a disk segment mounted to rotate about said axis; friction drive means between said main disk and said segment providing for rotation of said segment with said main disk also for rotation of said main disk relative to said segment when the latter is held against rotation; said segment having a transparent portion distinct in appearance from said main disk and through which are visible one at a time at said window a number of the characters less than the total number thereof on the disk; the characters that are visible through said transparent portion representing fertile days of the particular woman for whom the mechanism is set; setting means connected with said main disk operable for rotating said main disk and said segment; a stop member; means mounting said stop member for movement into and

from position to releasably hold said segment against rotation whereby said setting means may be operated to rotate said main disk to selectively dispose a group of said characters in position to be viewed one at a time at said window through said transparent portion; clock mechanism; means for so moving said stop member; and drive means between said clock mechanism and said main disk operable to rotate said main disk and said segment as a unit at a rate such that a different character is made visible at said window each 24 hour day.

11. Menstrual cycle indicating mechanism comprising a main disk having a series of signal characters thereon representing a number of consecutive days: means mounting said disk for rotation about an axis; means providing a window through which said characters are visible one at a time during rotation of said disk; a pair of disk segments mounted to rotate about said axis; said segments being axially spaced from one another and said main disk; said segments being movable between a position lying one completely eclipsing the other and positions for jointly covering consecutively a greater number of said characters than possible with one segment; each segment having a transparent portion through which are visible one at a time at said window a number of said characters less than the total number on said main disk and which represent cycle days before, during and after ovulation of the particular woman for whom the mechanism is set; said transparent portions being of a different appearance than said main disk whereby the characters seen therethrough are rendered distinctive in appearance from the other of said characters; friction drive means providing for rotation of said segments with said main disk as well as for rotation of said main disk relative to said segments when the latter are held against rotation; a clockworks; a drive connection between said clockworks and said main disk for rotating said main disk at a rate to reveal a different one of said characters at said window each 24 hour day; setting means manually operable for rotating said main disk and said segments; a first stop means operable to releasably hold both of said segments against movement whereby said main disk may be rotated to dispose a selected number of said characters in a position to be visible one at a time through said transparent portions at said window during clockworks effective rotation of said main disk; and a second stop means operable to releasably hold one of said segments against rotation whereby said setting means may be operated again to rotate said main disk and the other of said segments to cause said transparent portion to overlie additional characters on said main disk.

12. Menstrual cycle indicating mechanism comprising: a main disk having a series of signal characters thereon representing a consecutive number of days; means mounting said disk for rotation about an axis; means providing a window through which said characters are visible one at a time during rotation of said disk; a pair of disk segments mounted to rotate about said axis; said segments being axially spaced from one another and said main disk; said segments being movable between a position lying one completely eclipsing the other and positions for jointly covering a greater number of said characters than possible with one segment; each segment having a transparent portion through which are visible one at a time at said window a number of said characters less than the total number on said main disk and which represent cycle days before, during and after ovulation of the particular woman for whom the mechanism is set; said transparent portions being of a different appearance than said main disk whereby the characters seen through the transparent portions are rendered distinctive in appearance from the other of said characters; friction drive means between said main disk and said segments providing for rotation of said segments with said main disk as well as for rotation of said main disk relative to said segments when the latter

are held against rotation; a clockworks; a drive connection between said clockworks and said main disk for rotating said main disk at a rate to reveal a different one of said characters at said window each 24 hour day; setting means manually operable for rotating said main disk and said segments; a first stop means operable upon predetermined rotation of said main disk and said segments in one direction to releasably arrest such rotation of both segments whereby continued rotation of said main disk in said direction will permit a selected group of said characters to be disposed in a position to be viewed through said transparent portions at said window; and a second stop means operable in response to rotation of said main disk and said segment in the opposite direction following release of the latter by said first stop means, for arresting rotation of one of said segments whereby combined rotation of said main disk and said one segment in said opposite direction will dispose additional of said characters in position to be viewed through said transparent portions.

13. Menstrual cycle indicating mechanism comprising: a main signalling member; a pair of signalling members; means mounting said members for rotation about an axis; said main member having characters thereon representing a consecutive number of days; said members of said pair each having a transparent portion for overlying a number of said characters less than the total number on said main member; the characters that are visible through said transparent portions representing fertile days of the woman for whom the mechanism is set; said transparent portions having an appearance different from that of said main member and said characters; setting means operable for effecting relative rotation of said main member and said pair of members to dispose a selected group of consecutive characters in position to be viewed through said transparent portions; said members of said pair being of different axial extent from said axis; and stop members movable into and out of position to engage said members of said pair.

14. Menstrual cycle indicating mechanism comprising: a main signalling member; a pair of signalling members; means mounting said members for rotation about an axis; said main member having characters thereon representing a consecutive number of days; means providing a window through which said characters are visible during rotation of said members; said members of said pair each having a transparent portion for overlying a number of said characters less than the total number on said main member; the characters that are visible at said window through said transparent portions representing fertile days of the woman for whom the mechanism is set; and transparent portions having a color different from that of said main member on said characters; and setting means operable for effecting relative rotation of said main member and said pair of members to dispose a selected group of consecutive characters in position to be viewed at said window through said transparent portions during rotation of said members; clock mechanism; drive means operated by said clock mechanism for rotating said members at a rate such that a different character is visible at said window each 24 hour day; said setting means including a pair of stop members selectively movable into and out of the path of rotation of said members of said pair.

15. Menstrual cycle indicating mechanism comprising: a main signalling member; a pair of signalling members; means mounting said members for rotation in axially spaced relation to one another about a common axis; said main member having a series of characters thereon representing a consecutive number of days; said members of said pair each having a transparent portion through which are visible a number of said characters less than the total number on said main member; setting means operable to effect relative rotative movement of said members to set a selected number of said characters repre-

senting the estimated fertile days of a woman, in position to be viewed through said transparent portions; means providing a window through which characters on said main member are visible in consecutive order during rotation of said members; said transparent portions having an appearance such that the characters visible there-through are rendered distinct from the other of said characters; means for rotating said members about said axis; and a pair of stop members movable into position to arrest rotative movement of said members of said pair.

16. In indicating mechanism of the character described: a main signalling member having signal characters thereon representing a consecutive number of days; signal means; means mounting said signalling member and said signal means for relative movement; said signal means having at least a portion thereof formed of transparent material arranged and of a size whereby a selected number of said characters less than the total number are visible through the transparent portion; said transparent portion having an appearance such that those of said characters visible therethrough are distinguished from the other of said characters; setting means operatively connected with said signalling member and said signal means operable for effecting relative movement thereof to render a selected group of said characters visible through said transparent portion; stop means movable into and from a position for engaging said signal means and stopping movement thereof relative to said signalling member; and means for so moving said stop means.

17. In indicating mechanism of the character described: a main disk having a group of characters thereon representing a consecutive number of days; signal disk segments; means mounting said disk and disk segments for relative movement; each of said segments having at least a portion thereof formed of transparent material and arranged so that a group of said characters less than the total number are visible through said transparent portion; said transparent portions having an appearance such that those of the characters visible therethrough are given an appearance distinct from that of the other of said characters; setting means operatively connected with said disk and said segments operable for effecting relative movement thereof for rendering a selected group of said characters visible through the transparent portions of said segments; stop members for said segments; each segment having a marginal portion disposed to engage one of said stop members; and means for moving said stop members into and from position to be engaged by said marginal portions of said segments.

18. In indicating mechanism of the character described: a main signalling member having signal characters thereon representing a consecutive number of days; signal means; means mounting said signalling member and said signal means for relative movement; said signal means having means for rendering a number of said characters, less than the total number, distinct in appearance from the other of said characters; setting means operatively connected with said signalling member and said signal means operable for effecting relative movement thereof to render said signal means operative to distinguish a selected number of said characters; said setting means including a pair of stop members movable into and from position to stop movement of said signalling means relative to said signalling member; and means for effecting said relative movement.

19. In indicating mechanism of the character described: a main signalling member having signal characters thereon; means rotatably mounting said member; means providing a window through which said characters are visible; signal means; means mounting said signal means for rotation adjacent said main member; said signal means having provision for rendering a number of said characters, less than the total number, distinct in appearance from the other of said members; a drive connection between said main member and said signal means providing

13

for joint rotation thereof and for rotation of said main member relative to said signal means when the latter is held against rotation; means for releasably holding said signal means against rotation; means for imparting rotary movement simultaneously to said signalling member and said signalling means; said signalling means including two relatively movable segments; said releasable holding means including two stop members; and means for selectively moving said stop members to stop rotation of said segments.

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**UNITED STATES PATENT OFFICE**  
**CERTIFICATE OF CORRECTION**

Patent No. 2,979,884

April 18, 1961

Maurice Gordon

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 37, for "with" read -- without --.

Signed and sealed this 3rd day of October 1961.

(SEAL)

Attest:

**ERNEST W. SWIDER**

Attesting Officer

**DAVID L. LADD**

Commissioner of Patents

USCOMM-DC

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