Sept. 19, 1944. M. GOVIN Y GOMEZ 2,358,702

PERPETUAL CALENDAR

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Fig. 1.

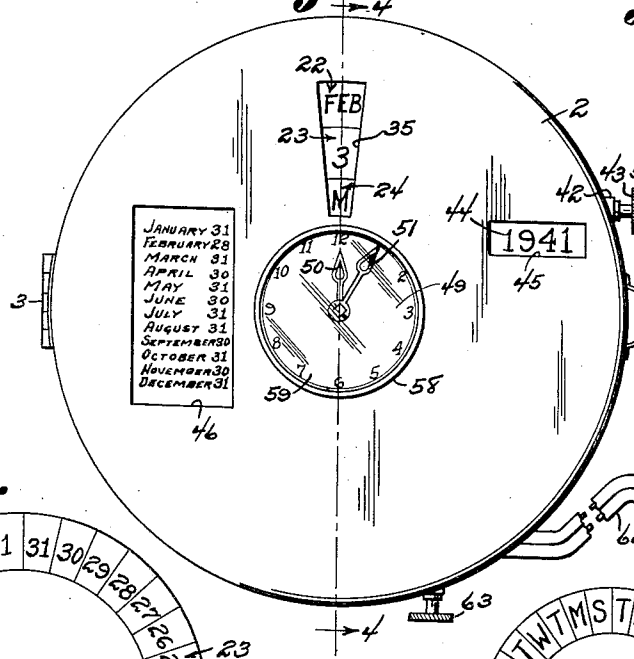


Fig. 10.

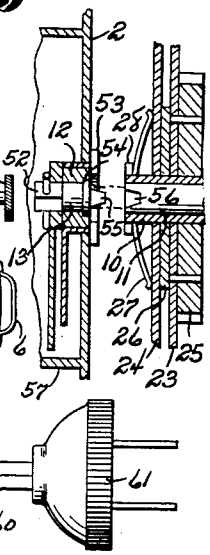


Fig. 6.

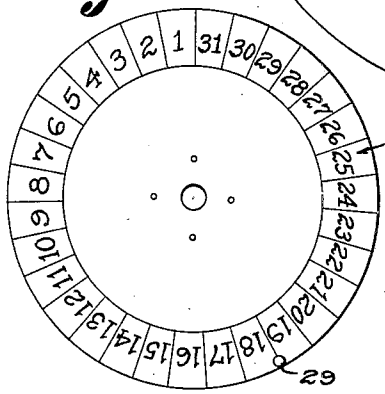


Fig. 9.

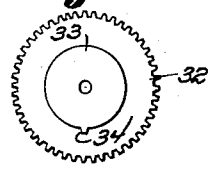


Fig. 5.

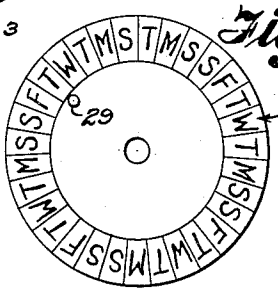


Fig. 8.

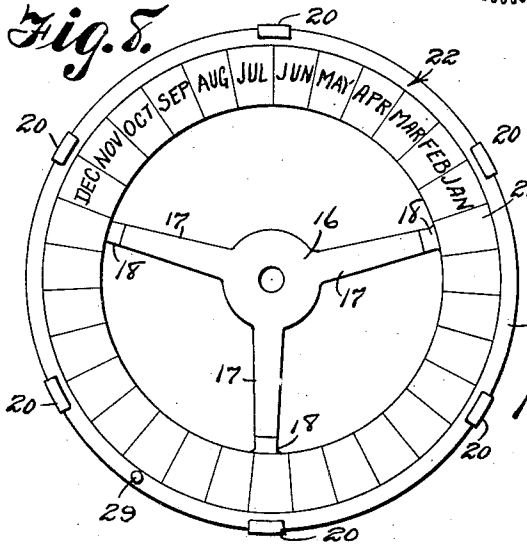
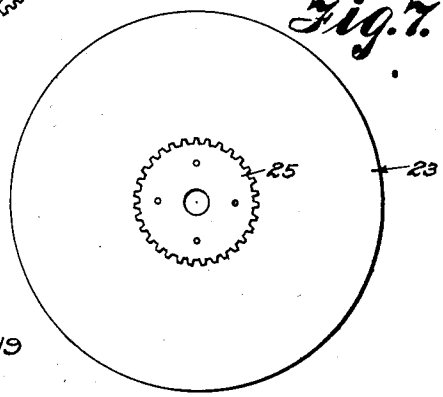


Fig. 7.



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PERPETUAL CALENDAR

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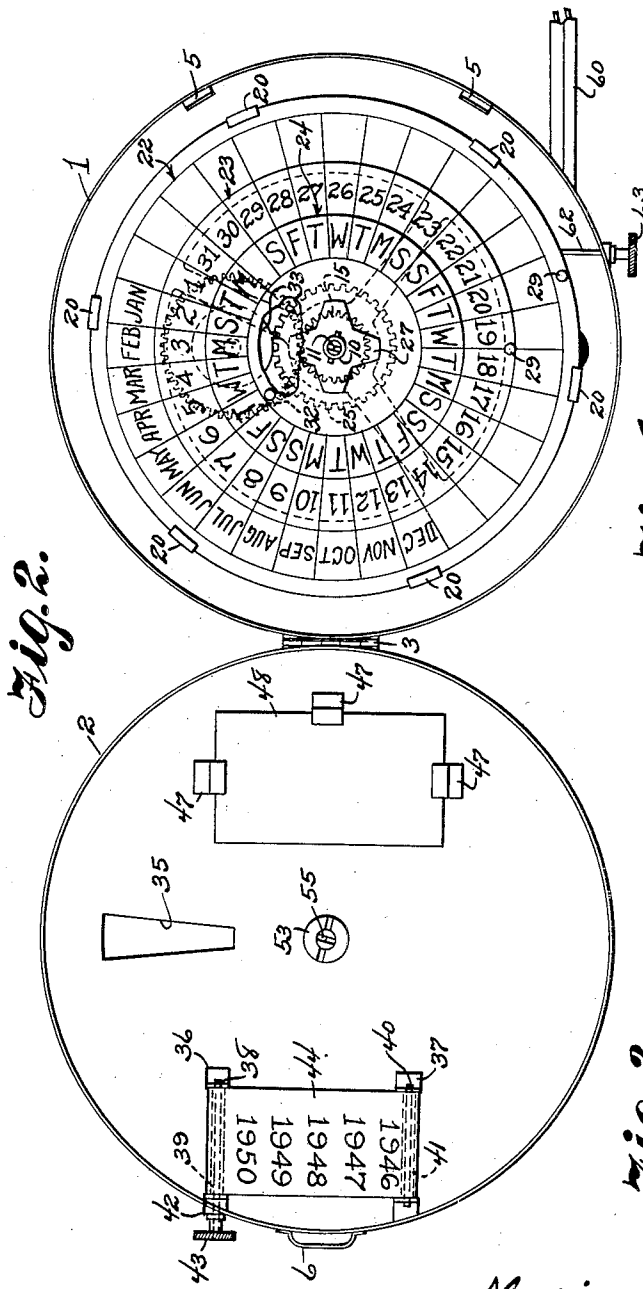


Fig. 2.

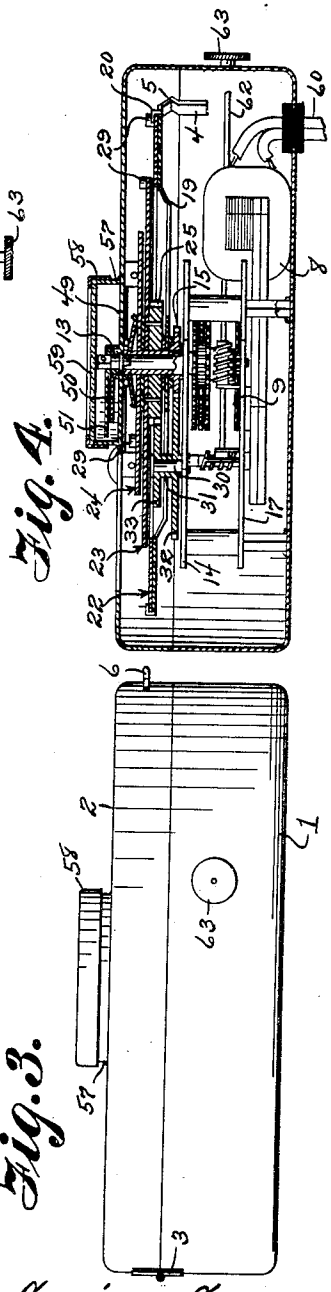


Fig. 4.

Fig. 3.

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PERPETUAL CALENDAR

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Application September 2, 1941, Serial No. 409,281

2 Claims. (Cl. 58—5)

This invention relates to mechanical calendars of the perpetual type, and its general object is to provide an apparatus of that character which includes a casing having windows therein for date indicia on movable means to show through said windows, so that the current date, including the year, month, and day of the month and week, can be ascertained at a glance.

A further object is to provide a perpetual calendar that is operated by clockwork for automatically moving a pair of dials or disks, in step by step rotation, once in every twenty-four hours, one dial being marked with the days of the week and the other with the days of the month, and a manually operated dial marked with the names of the months cooperates with the first dials, the marks of each dial being arranged to individually show through a window in the casing, while a manually changeable yearly date indicia bearing means shows through another window in the casing, with the result it will be seen that my calendar, under normal working conditions requires attention only once a month.

A still further object is to provide a perpetual calendar which can be readily adjusted to take care of the variations of the number of days in the months, and for the additional days and leap years.

Another object is to provide what may be termed a combined calendar and horologic apparatus, in that it includes a clock dial, with hour and minute hands associated therewith, the dial and hands being applied to the casing, so that the time of the day, together with calendar dates can be ascertained simultaneously.

Another object is to provide an apparatus of the character set forth, that is simple in construction, neat in appearance, inexpensive to manufacture, and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a front view of the apparatus which forms the subject matter of the present invention.

Figure 2 is a view, with the closure lid of the apparatus casing in open position, to illustrate the interior structure, including the respective date indicia bearing disks and the elements carried by the lid.

Figure 3 is a bottom plan view of the apparatus.

Figure 4 is a sectional view taken approximately on line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a front view of the dial having the week day indicia thereon.

Figure 6 is a front view of the dial having numerals thereon indicating the days of the months.

Figure 7 is a rear view of the dial of Figure 6, and illustrates the thirty-one toothed gear fixed thereto.

Figure 8 is a front view of the dial having the names of the months thereon.

Figure 9 is a detail view of the geared means for rotating the daily indicia bearing dials in a step by step movement, once in every twenty-four hours.

Figure 10 is a fragmentary vertical sectional view illustrating the sections of the hour and minute hand arbors of my apparatus separated.

Referring to the drawings in detail, it will be noted that the apparatus in the form shown includes a relatively narrow cylindrical casing made up of a body 1 and a closure lid 2 that is hinged to the body 1 as at 3, the lid being held in closed position by a pair of spring arms 4 fixed to the inner face of the cylindrical wall of the body and formed with substantially V-shaped free portions 5 to bear against the lid, as best shown in Figure 4. The lid may have depressions therein providing seats for the free portions. A handle 6 is secured to the lid diametrically opposite the hinge to facilitate opening the lid, as will be apparent upon inspection of Figure 2.

While the apparatus can be operated by mechanical clockwork or in other words one that is wound by hand, the form shown includes an electrical clockwork of a simplified construction, that includes a frame 7 fixed within the body and having mounted thereon a motor 8 operating a train of conventional gears 9 which in turn rotate sectional hour and minute hand arbors, the main sections being indicated respectively by the reference numerals 10 and 11 and the stub sections by 12 and 13 respectively. The stub sections are carried by the lid and will again be later referred to.

The main hour arbor section 10 is mounted in the front plate 14 of the clock train frame for rotation, and extends forwardly therefrom for disposal a considerable distance beyond and centrally of the body of the casing, as best shown in Figure 4, and the minute arbor section 11 is mounted within the section 10 for rotation independently thereof, in the usual manner. Fixed to the section 10 to be rotated thereby is a relatively small gear 15 for a purpose which will be later described, and the gear is loosely engaged with the plate 14. Disposed between spacing washers and mounted for rotation on the section 10 in close proximity to the gear is the flat hub 16 of the innermost calendar indicia dial which is substan-

tially in the form of a spider, in that it includes arms 17 radiating from the hub, the arms terminating in outwardly bent ends 18 having formed thereon a flat rim portion 19 that has secured on the front face thereof by tabs 20 a flat annulus 21. The annulus is divided into thirty-one equal spaces by radial lines, as best shown in Figure 8, and printed or otherwise provided in twelve consecutive spaces are the abbreviations of the names of the months, while the remaining spaces are blank. The innermost dial which is broadly indicated by the reference numeral 22, is of greater diameter than the intermediate dial 23 and the latter is of greater diameter than the outermost dial 24.

The intermediate dial 23 is in the form of a flat disk having a central opening therein and secured by pins or the like to the rear face of the dial 23 is a gear 25 having thirty-one teeth formed on the outer periphery thereof, and the intermediate dial is also mounted for rotation on the section 10, with the gear loosely engaging the outermost spacing washer of the hub of the dial 22. The front face of the dial 23 on the outer peripheral portion thereof is likewise divided with radial lines into thirty-one spaces which have numbers therein from 1 to 31 inclusive, to represent the days of a thirty-one day month, however, it will be obvious that the dial 23 is also used for months having thirty days therein, as well as for the month of February which has twenty-eight or twenty-nine days therein.

Rotatably mounted on the section 10 in bearing engagement with the dial 23 is a spacing washer 26 of relatively great diameter, and bearing against the front face of the washer 26 is the outermost dial 24 that is likewise in the form of a disk having a central opening therein for mounting the dial 24 on the section 10 for free rotation. The dial 24 is held in bearing engagement against the washer 26 by a cruciform arcuate or concaved spring washer 27 that is held on the section 10 by diametrically opposed lugs 28 formed on or otherwise secured to the outer end of the section 10, as best shown in Figure 10. The front face of the dial 24 like the dial 23 is also divided by radial lines on the outer peripheral portion thereof, into thirty-one spaces having the first letter of the names of the weeks therein, there being a letter in each of these spaces and the letters are arranged consecutively from Sunday to Saturday. A circular line engages the inner ends of the radial lines of each of the dials 23 and 24 to complete the spaces, as best shown in Figures 5 and 6. In view of the fact that there are thirty-one spaces on the dial 24, there are letters for four weeks and three extra days, to take care of months having thirty-one days therein, and months having thirty days therein as well as the month of February, whether it has twenty-eight days or twenty-nine days.

From the foregoing, it will be seen that all of the indicia bearing dials are mounted for rotation on the section 10 for concentric arrangement with each other, and due to the variance in the diameters of the dials and the arrangement of the indicia thereon, the indicia of the dial 23 will be disposed beyond the outer periphery of the dial 24, while the indicia of the dial 22 will be disposed beyond the outer periphery of the dial 23, and each of the dials have relatively small studs 29 fixed thereto, so that each can be manually rotated when the closure lid is in open position.

However, the dial 23 is automatically rotated in a step by step movement, once in every twenty-four hours and for that purpose, I provide a stub shaft 30 fixed to and extending forwardly from the front plate 14. The shaft has rotatably mounted thereon a hollow stub shaft 31 which has fixed to the inner end thereof a gear 32 meshing with the gear 15, and fixed to the outer end of the stub shaft 31 is a relatively small disk 33 having a single tooth 34 formed on the periphery thereof, to mesh with the teeth of the gear 25, for rotating the dial 23 in step by step movement, as previously set forth, and due to the fact that the dial 24 is held in bearing engagement against the spacing washer 26, the dial 24 will be moved simultaneously with the dial 23.

Arranged in the closure lid 2 for the indicia of each of the dials to individually show therethrough, as shown in Figure 1, is a window opening 35 in the form of a slot that is disposed radially of the lid and increases in width from its outer to its inner end.

The window opening or slot 35 is preferably closed by suitable transparent means such as glass, and the date showing through the window in Figure 1 is Monday February 3. In view of the automatic movement of the dials 23 and 24, it will be obvious that at the end of the day or twenty-four hour period indicated by Monday February 3 that the dials 23 and 24 will be moved one step so that the numeral 4 and the letter T will show through the window to indicate Tuesday February 4. When the month of February has been completed, the dial 22 is manually moved so that the abbreviation of the next month, namely March will show through the window, as will be apparent. Inasmuch as February has only twenty-eight days therein, and twenty-nine days in leap years, it will be further apparent that the dial 23 must be manually moved for disposing the numeral 1 to show through the window, upon the completion of the month of February, and of course the dial 24 can likewise be manually moved for disposing the proper letter in registration with the numeral 1. Manual movement of the dials 23 and 24 is likewise necessary when changing from thirty-one day months to thirty day months and vice versa, but otherwise the dials 23 and 24 are moved automatically.

The yearly indicia carrying and changing means is best shown in Figure 2, and is carried by the lid 2. It includes pairs of right angle brackets 36 and 37 fixed to the inner face of the lid, in spaced relation to each other, with the brackets of each pair arranged in alignment. Mounted in the brackets 37 are the trunnions 38 of a roller 39, while the trunnions 40 of a roller 41 are mounted in the brackets 36. The trunnions 38 and 40 are provided by the ends of shafts that extend through and have the rollers fixed thereto, and the shaft of the roller 39 extends through the annular flange of the lid 2, as best shown in Figure 2, as well as through a bearing collar 42 fixed in the flange. The outer end of the latter shaft has secured thereto a serrated disk 43 providing a handle for rotating the roller 39.

Mounted on the rollers 39 and 41 is an endless tape or web 44 that frictionally contacts the rollers, so that upon rotation of the roller 39, the tape will be moved for disposing any one of the yearly dates printed or otherwise provided on the tape in registration with an elongated opening or slot 45 in the lid, as shown in Figure 1, for cooperation of the yearly date with the

monthly, daily and weekly indicia showing through the window **35**. The slot **45** is likewise preferably closed by transparent means such as glass to provide a window, as will be apparent.

I likewise preferably provide a rectangular opening **46** in the lid **2** that may also be covered with transparent material to provide a window, and mounted in clamping tabs **47** secured to the rear face of the lid **22** is a card or sheet **48** of any suitable material having the names of all the months thereon and the number of days in each month to show through the opening **46**. This indicia merely acts as a reference, to facilitate changing the position of the dial **23** to take care of the variance in the number of days in different months, as will be apparent.

In order to simultaneously ascertain the time of day with the calendar date, I provide a clock dial **49** centrally on the front face of the lid **2**, as shown in Figure 1, and cooperating with the dial **49** to indicate the time, is an hour hand **50** and a minute hand **51**.

The minute hand is removably mounted on the square cornered outer end **52** of the stub section **13**, while the hour hand is frictionally mounted on the stub section **12** to be rotated thereby. A pair of spaced semi-circular members **53** are fixed to the rear end of the stub section **12** and bear against the rear face of the lid **2**, to hold the stub sections secured to the lid, as will be apparent upon inspection of Figure 10, while the stub section **13** has a collar **54** formed thereon to bear against a shoulder in the rear end of the section **12** to hold the section **13** mounted within the section **12**. A flat tapered lug **55** is formed on the rear end of the section **13** to be received within a recess **56** in the front end of the section **11**, the recess being shaped to fit the lug **55**, and the spaces between the ends of the semi-circular members **53** are for the purpose of receiving the diametrically opposed lugs **28** therein, so that when the lid is in its closed position of Figure 4, the stub sections **12** and **13** are rotated by the main sections **10** and **11**, for moving the hands about the face of the dial **49**.

The dial in the form shown in provided by applying the numerals and graduations directly on the front face of the lid **2**, but a disk type dial may be provided for the clock. In any event, a casing is provided for the clock dial and the casing includes a ring member **57** fixed directly to the front face of the lid **2**. Threaded or otherwise mounted on the ring member **57**, is a flanged retaining member or rim **58** for holding a transparent cover **59** on the ring member **57**, as clearly shown in Figure 4.

In view of the fact that the clockwork shown is of the electrical type, it is provided with conductors **60** having the usual prong type plug **61** secured to the outer ends thereof.

In order to set the hands **50** and **51**, a setting stem **62** is provided and which extends through the body of the casing, with a serrated disk **63** secured to the outer end thereof, while its inner end is associated with the gear train to bring about rotation of the arbors.

Any suitable supporting stand, base or the like may be provided for the apparatus, for supporting the same relative to a table, or a hanger bracket or other suitable means may be provided for suspending the apparatus relative to a wall.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims. In fact, the clock dial and hands, together with the associated elements thereof including the stub shafts can be eliminated from the remaining structure, or in other words, the calendar can be made without the hourly time indicating means, as will be apparent.

What I claim is:

1. In a calendar clock, a casing having a front wall hingedly mounted thereon for opening and provided with openings, a frame fixed in the casing, a main hollow hour shaft rotatably supported on the frame, a main minute shaft rotatably extended through the hollow shaft, clock work supported on the frame for driving the said shafts, concentrically disposed hour and minute stub shafts journaled on and extending through the front wall, means for detachably connecting the said hour and minute stub shafts with the main hour and minute shafts respectively when the front casing wall is in closed position, a clock dial on the front casing wall, hour and minute hands fixed on the respective hour and minute stub shafts for rotation relative to the dial, and a plurality of calendar disks of progressively increasing diameter bearing on the outer main shaft for rotation thereabout, the said disks having calendar indicia registering with an opening in the front wall to exhibit the same exteriorly of the casing, the said stub shafts being moved to disconnecting relation with their driving main shafts when the front casing wall is opened whereby to permit manual setting of the disks angularly of the main shaft without disturbing the hand setting.

2. In a calendar clock, a casing having a front wall hingedly mounted thereon for opening and provided with openings, a frame fixed in the casing, a main hollow hour shaft rotatably supported on the frame, a main minute shaft rotatably extended through the hollow shaft, clock work supported on the frame for driving the said shafts, concentrically disposed hour and minute stub shafts journaled on and extending through the front wall, means for detachably connecting the said hour and minute stub shafts with the main hour and minute shafts respectively when the front casing wall is in closed position, a clock dial on the front casing wall, hour and minute hands fixed on the respective hour and minute stub shafts for rotation relative to the dial, and a plurality of calendar disks of progressively increasing diameter bearing on the outer main shaft for rotation thereabout, the said disks having calendar indicia registering with an opening in the front wall to exhibit the same exteriorly of the casing, gear mechanism mounted on the frame having connection with the hollow main shaft and with certain of the disks for periodically rotating predetermined calendar disks from the said hollow shaft, the said calendar disks being accessible for manual setting by opening the front wall whereby the stub shafts will be moved to disconnecting relation with their driving main shafts so that the hand setting is not disturbed during manual adjustment of the disks.

MARIA GOVIN Y GÓMEZ.