April 19, 1932. G. M. LEE 1,855,062

PERPETUAL CALENDAR

Filed June 11, 1930

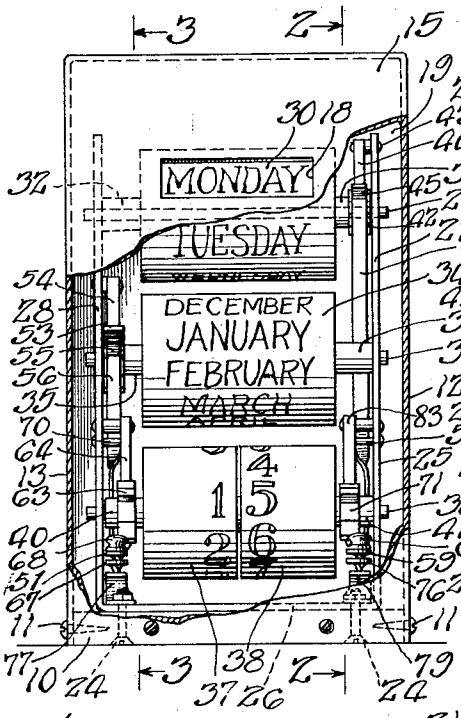

Fig. 1

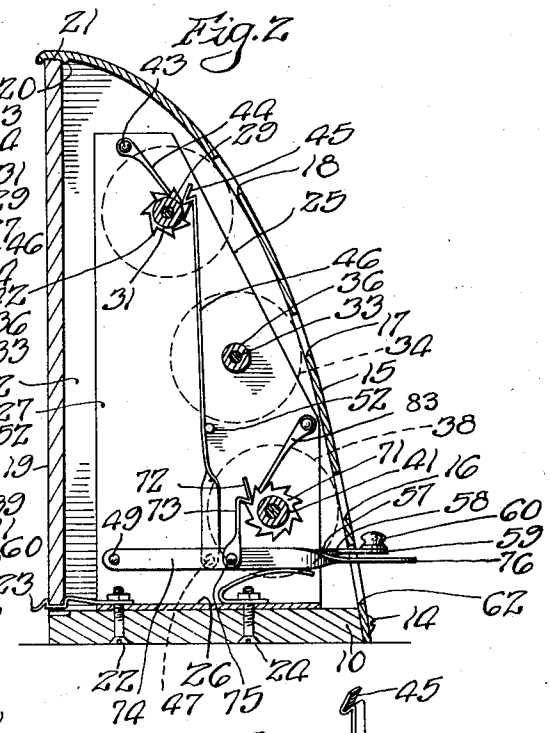

Fig. 2

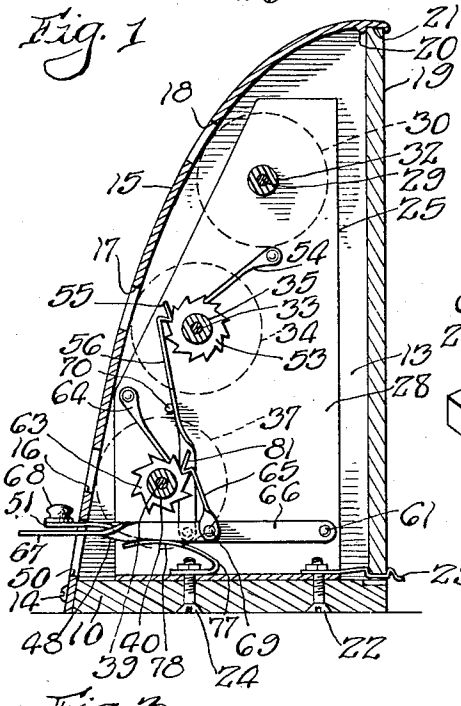

Fig. 3

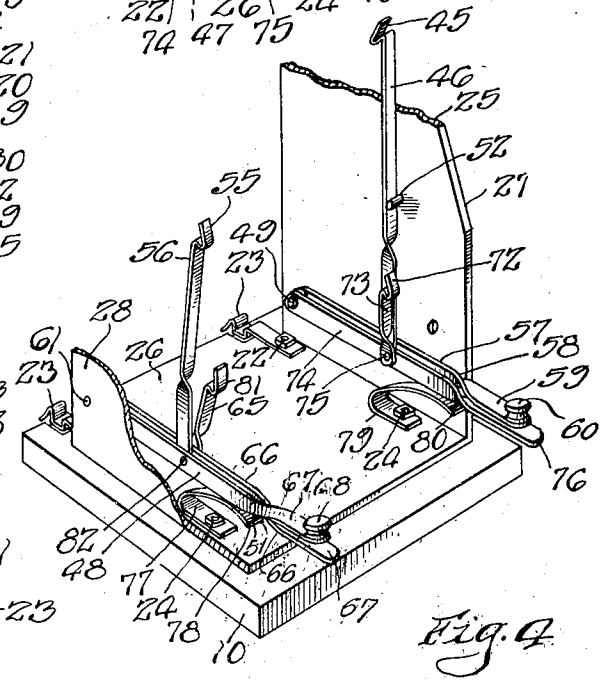

Fig. 4

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UNITED STATES PATENT OFFICE

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PERPETUAL CALENDAR

Application filed June 11, 1930. Serial No. 460,496.

This invention relates to certain novel improvements in perpetual calendars, and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

The salient object of this invention is the provision of a perpetual calendar device which will be simple and positive in operation while embodying a minimum number of parts.

Another object of the invention is the provision of an improved device in which the day of the week and the date may be changed daily by the simple operation of pressing one lever.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings, showing the preferred form of construction and in which:

Fig. 1 is a front elevational view of a preferred form of construction of my invention;

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

Fig. 3 is a sectional view taken substantially on the line 3—3 in Fig. 1; and

Fig. 4 is a perspective view of certain mechanisms embodied in the invention.

Referring to the drawings wherein a preferred embodiment of the invention is illustrated, 10 indicates the base of a housing on which are mounted by means of screws or the like 11 side walls 12 and 13. Attached to the base 10 by means of suitable connecting elements such as screws 14 is the arcuated face plate 15 of the housing in which openings 16, 17 and 18 are provided at spaced intervals. Removably mounted at the rear of the housing is a door 19 which has a ridge 20 formed on the upper edge thereof and this ridge portion 20 is detachably inserted into a groove 21 formed in the face plate 15. Mounted on the base 10 at the rear thereof by means of a suitable screw and nut structure 22 are clamps 23 and the door 19 in closed position is retained in place by yielding engagement with the clamps 23.

Removably attached to the base 10 by means of the bolt and nut structures 22 and similar bolt and nut structures 24 is a frame 25 which includes a base portion 26 and side portions 27 and 28 formed integrally therewith.

Rotatably mounted in the side walls 27 and 28 of the frame 26 by means of a shaft 29 is a drum 30. A suitable spacing collar 31 is provided on the shaft 29 between the side wall 27 and the drum 30 to prevent longitudinal movement of the drum and a second spacing collar 32 is provided on the shaft 29 between the wall 28 and the drum 30. Inscribed on the drum 30 in any suitable manner are the names of the days of the week and in the operation of my invention, which will be explained hereinafter, the drum 30 is rotated and the names of the days of the week appear through the slot 18.

Rotatably mounted on a shaft 33 which is journaled in suitable openings in the walls 27 and 28 is a drum 34 which is disposed below and forwardly of the drum 30. Provided on the shaft 33 between the wall 28 and the drum 34 is a spacing collar 35 and disposed at the opposite end of the drum 34 is a collar 36. Inscribed on the drum 34 are the names of the months of the year and in the use of my invention these names are successively rotated into position so as to be visible through the slot 17.

Co-operating drums 37 and 38 are rotatably mounted on the shaft 39 which is journaled in suitable openings in the walls 27 and 28 and these drums 37 and 38 are disposed below and forwardly of the drum 34. Provided on the shaft 39 between the wall 28 and drum 37 is a spacing collar 40 and provided on shaft 39 between the drum 38 and wall 27 is a spacing collar 41. Inscribed on the drum 37, and circumferentially therearound are the numerals 1, 2, 3, followed by a blank space, and then the numerals 1, 2, 3, again followed by a blank space, for a purpose to be made apparent hereinafter, these numerals and the blank spaces being selectively visible through the slot 16. Inscribed on the drum 38 and

arranged circumferentially therearound are the numerals 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0.

Provided on the outer end portion of the collar 31 are ratchet teeth 42 and there are seven of these teeth 42 formed therein, one for each of the days of the week. Journaled on a stud 43 which is seated in the wall 28 is a flat spring trip 44, the lower end portion of which has yielding engagement against the teeth 42. Having engagement with the teeth 42 is a dog 45 which is formed at the upper end of an arm 46. The arm 46 is attached by means of a pin 47 or the like to a lever arm 57 which includes a portion 59 that projects out through a slot 62 provided in the face plate 15, thereby providing a handle on which a knob 60 is mounted in any suitable manner. A stud 52 is mounted in the wall 28 and it is manifest that when the knob 60 is pressed downwardly to rotate the drum 30 so that the name of the day of the week will be visible through slot 18, the arm 57, being pivoted on stud 49, will move arm 46 which is prevented from forward movement by stud 52, and arm 46 will in turn cause the dog 45 to advance the drum 30 in clockwise direction, as seen in Fig. 2, by engaging with the teeth 42 against the spring action of the trip 44, which prevents the reverse rotatory movement of the drum 30.

Twelve ratchet teeth 53 are provided on the collar 35, one for each month of the year. Engaging these teeth and preventing clockwise rotation of drum 34 as seen in Fig. 1, is a trip 54 which is similar to the trip 44 and similarly mounted but in the opposite wall of the frame 25 from the trip 44. Provided for rotating the drum 34 in counterclockwise direction, as seen in Fig. 3, is a dog 55 which is formed on the upper end of an arm 56. The arm 56 is connected by means of a suitable pin 82 to an arm 48 which is pivotally mounted on a stud 61 which is mounted in the wall 28. The arm 56 abuts a stud 70 mounted in the wall 27 and the stud 70 provides a spring action on the dog 55. The arm 48 includes a portion 51 which projects outwardly of the housing through a slot 50 provided in the face plate 15, thereby providing a lever handle 51.

Provided in the collar 40 are eight ratchet teeth 63 and preventing the drum 37 from counterclockwise rotation, as seen in Fig. 3, is a trip 64 which is similar to the trip 44 and similarly mounted in the wall 28 of the frame. Engaging the teeth 63 is a dog 81 which is formed in the upper end portion of an arm 65. The arm 65 is attached to a lever arm 66 by means of a stud 69 and this arm 66 includes a portion 67 which projects outwardly through the slot 50 in the face plate 15. As best shown in Fig. 3, the arm 66 is pivotally mounted on the stud 61 on which the arm 48 is likewise pivotally mounted, the arm 48 carrying a knob 68. It is manifest, therefore, that pressing down on the portion 67 will actuate the dog 81 and rotate the drum 37, while pressing down on the knob 68 will depress arms 48 and 66, by engagement of the portion 51 of arm 48 against the portion 67 of arm 66, and it will be seen, therefore, that the drums 37 and 34 may be actuated by the one operation of pressing down on the knob 68. In this connection, however, in setting the device for use, commencing on the first day of the month, for example, the drum 37 is rotated by pressing down on the portion 67 until either one of the two blank spaces thereon is visible through the slot 16, and after the ninth day of the month has passed the drum 37 is rotated by one downward stroke of the portion 67 and attached arm 66 which brings the numeral "1" on drum 37 into position so that this numeral is visible through the slot 16. The drum 38 is then rotated, in a manner to be described presently, to bring the "0" mark thereon into alignment with the numeral "1" on drum 37, thereby producing the combination "10" for the tenth day of the month. It is apparent, therefore, that the drum 37 will then be allowed to remain stationary until the nineteenth day of the month has passed when drum 37 will again be rotated to bring the numeral "2" into view through the slot 16, thereby to provide the first number for the numeral '20", the "0" of which is described on drum 38.

Ten ratchet teeth 71 are provided in the collar 41 and engaging these teeth is a dog 72 which is formed on the upper end of an arm 73. The arm 73 is connected to an arm 74 by means of a pin 75 or the like and as shown in Figs. 2 and 4, the arm 74 is pivotally mounted on the stud 61 on which the arm 58 is likewise mounted. The arm 74 includes a portion 76 which projects outwardly through the slot 62, thereby providing a handle.

A leaf spring 77 is provided under the arms 48 and 66 for returning these arms to horizontal position after they have been pressed downwardly to actuate the drums 34 and 37, respectively. The spring 77 is mounted in the base 10 in any suitable manner, such as by means of the bolt and nut structure 24, and included in spring 77 is an arcuated portion 78. Similarly mounted under the arms 58 and 74 is a spring 79 which is similar to spring 77 and the spring 79 includes an arcuated portion 80.

It is manifest that the drum 38 is rotated in a counter-clockwise direction, as seen in Fig. 2, by pressing down on the handle portion 76 of arm 74 which actuates arm 73 and engages the dog 72 with the teeth 71. As has been pointed out, hereinbefore, the drum 38 has the numerals "0", "1", "2", etc. to "9" inclusive inscribed thereon so that during the first nine days of the month the numerals "1" to "9" will be successively rotated into position so as to be visible through the slot 16.

After the ninth day has passed, the "0" on drum 38 is rotated into alignment with the slot 16 and the "1" on drum 37 is then brought into alignment with the "0" on drum 38, thereby providing the numeral "10" to indicate the tenth day of the month. The drum 37 is then allowed to remain stationary during the days of the month from the tenth to the nineteenth inclusive, while the drum 38 is moved each day to form with the numeral "1" on drum 37, the successive dates eleven to nineteen. It will be seen, therefore, that after the nineteenth day has passed, drum 37 will be rotated by pressing down on the portion 67, thereby bringing the numeral "2" on drum 37 into view through the slot 16, after which the drum 38 is successively rotated to produce the dates in the twenties, and so on. After the expiration of the full number of days in any month the drum 37 is rotated to bring one of the two blank spaces provided thereon into view through slot 16.

It is manifest, therefore, that drum 34 is actuated only once a month, by pressing down on knob 68, which action will likewise lower arm 66 and rotate drum 37 to expose one of the blanks thereon, whereas drum 38 and drum 30 are actuated each day by the one act of pressing down on knob 60 to change the date and day respectively. A pivotally mounted spring trip 83 (Figs. 1 and 2) is associated with the ratchet teeth 71 in the same manner as the spring trips 45, 54 and 64 are associated with the other ratchet teeth hereinbefore described.

From the foregoing description of my invention it is apparent that I have provided a perpetual calendar which will be simple and positive in operation and highly efficient in use and economical in manufacture. It will likewise be apparent that my device when suitably decorated will present a neat and attractive appearance.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:

In a perpetual calendar, a housing, and a frame removably mounted therein, a day of the week drum and a units date drum rotatably mounted in said frame one above the other, a ratchet rotatable with each of said drums, a pair of levers pivotally mounted on said frame and each including a handle projecting from said housing and said handles being arranged one above the other, an arm pivotally connected to each of said levers, and a pawl at the upper end of each of said arms engageable with a corresponding one of said ratchets to rotate said drums in unison when said handles are both depressed by pressure exerted on the upper of the two handles.

In testimony whereof I affix my signature.

GERHARD M. LEE.