

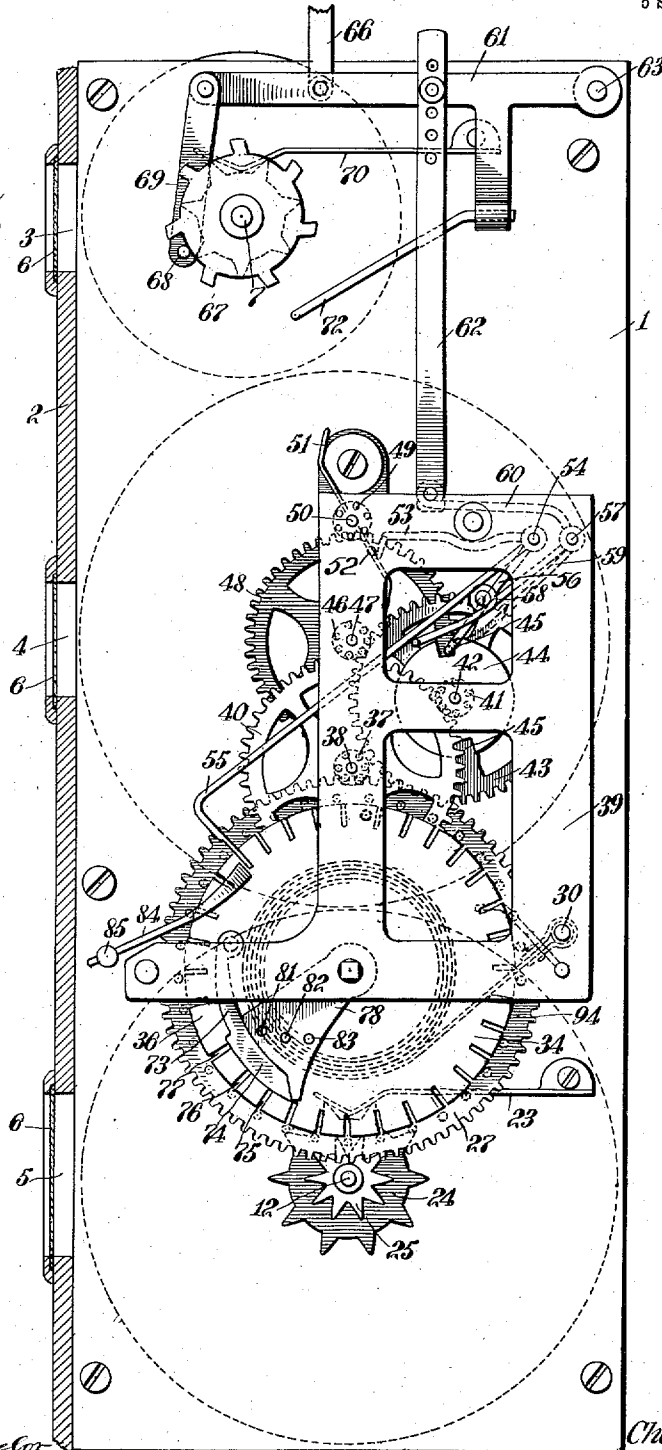
968,319.

C. E. BOILLLOT.
PERPETUAL CALENDAR.
APPLICATION FILED SEPT. 3, 1909.

Patented Aug. 23, 1910.

5 SHEETS—SHEET 1.

Fig. 1.



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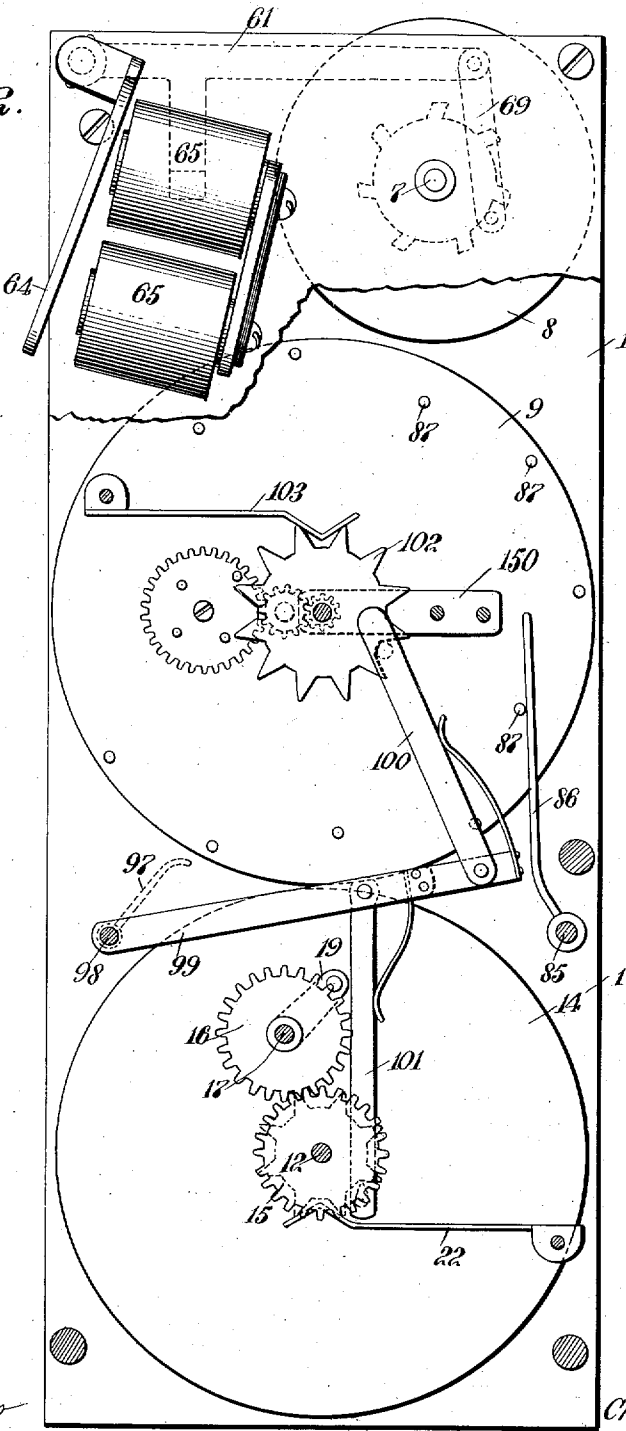
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5 SHEETS—SHEET 2.

Fig. 2.



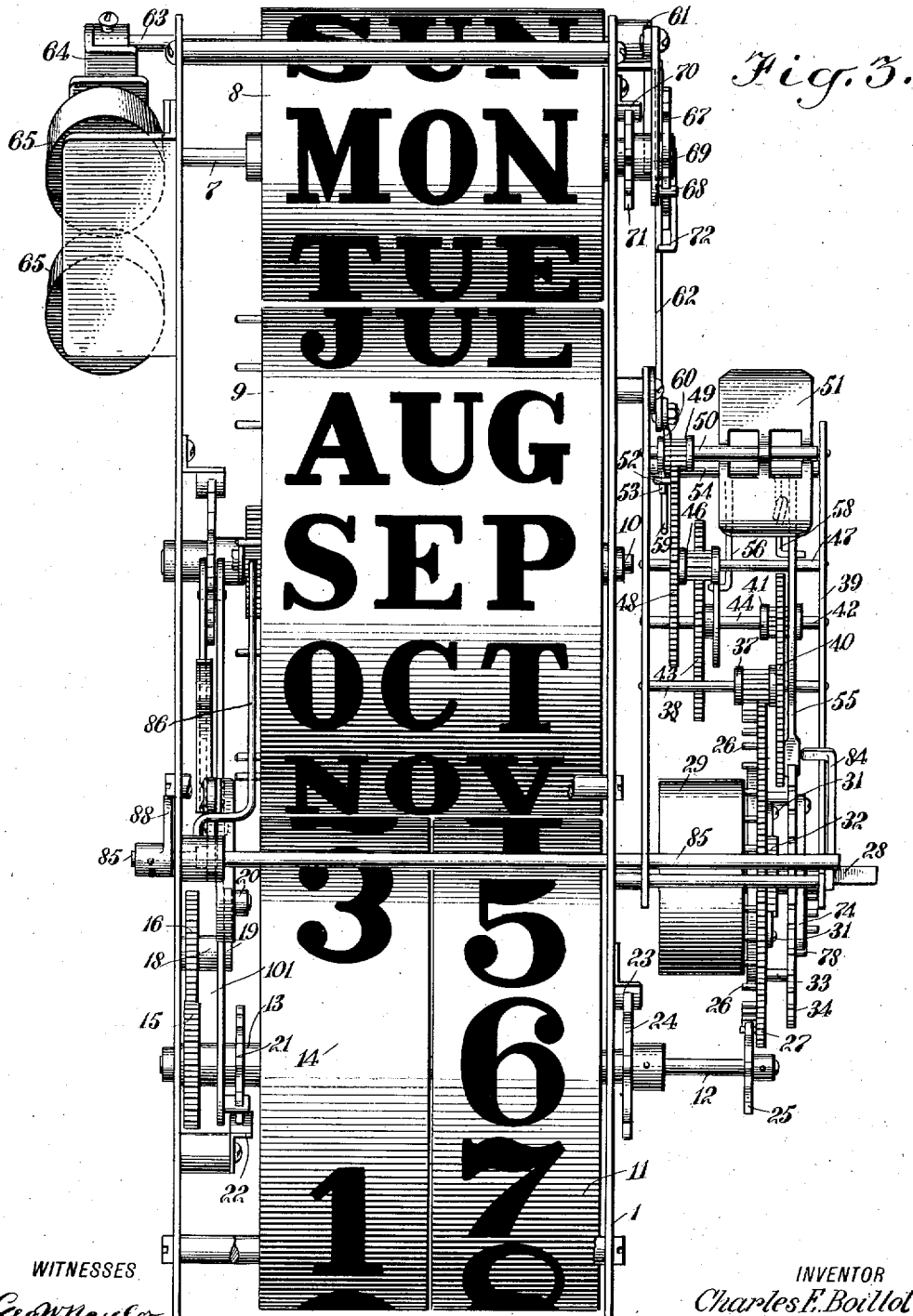
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5 SHEETS—SHEET 4.

Fig. 4.

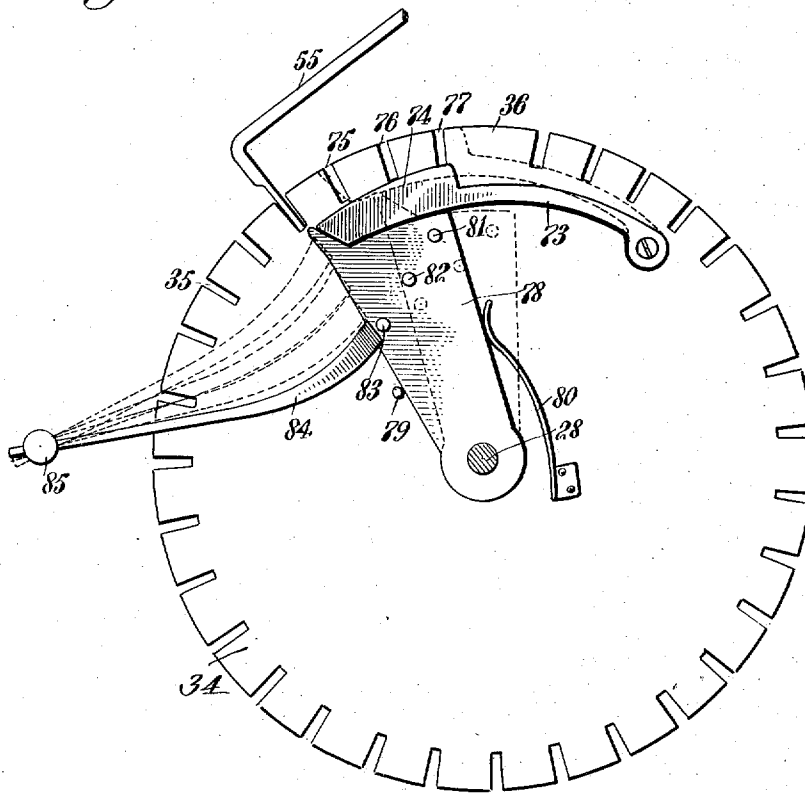
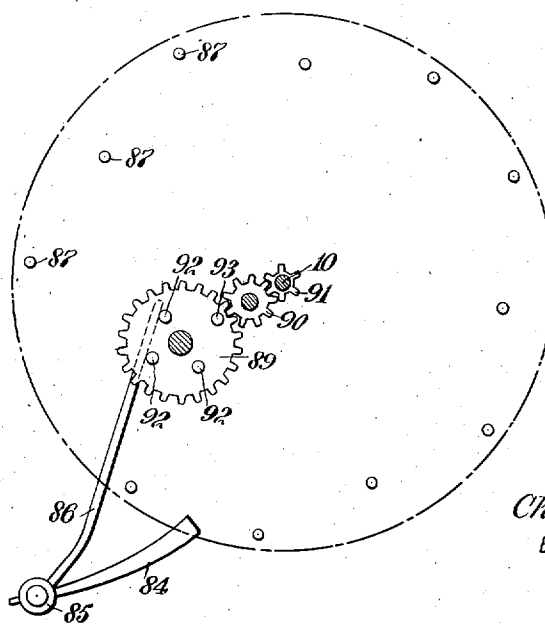


Fig. 5.



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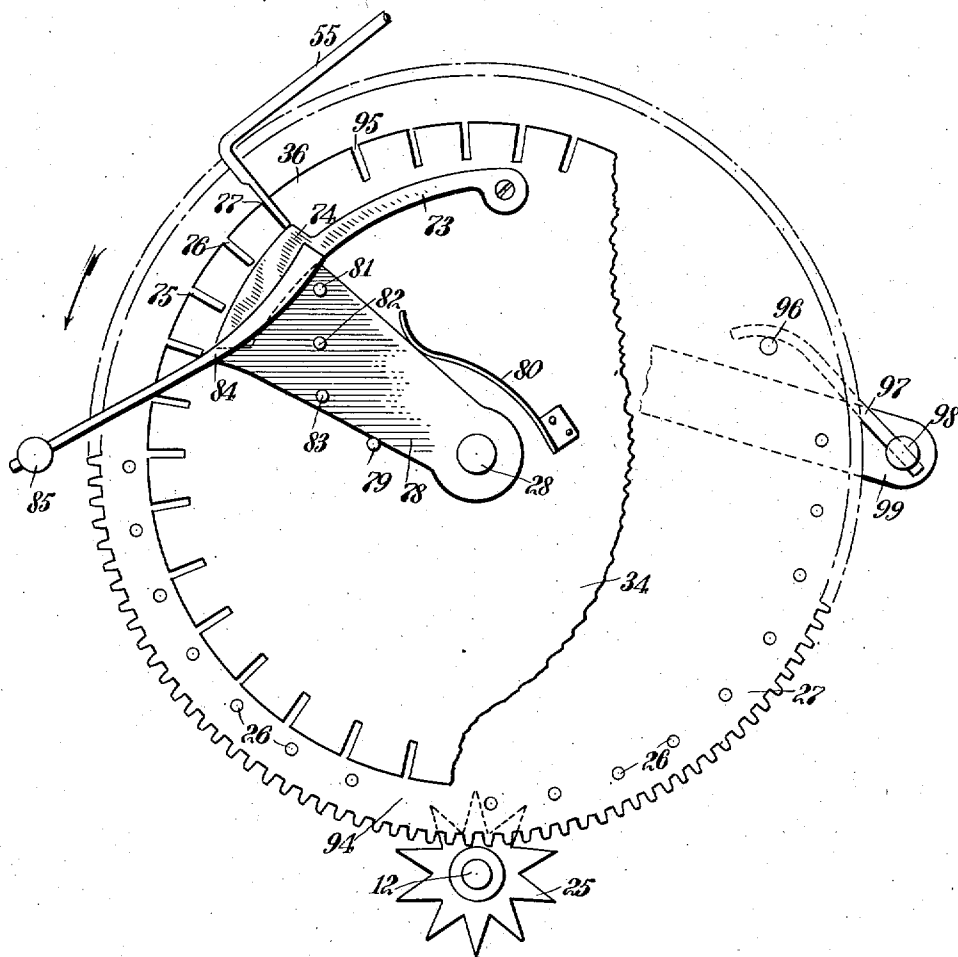
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5 SHEETS—SHEET 5.

Fig. 6.



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PERPETUAL CALENDAR.

968,319.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed September 3, 1909. Serial No. 516,001.

To all whom it may concern:

Be it known that I, CHARLES E. BOILLOT, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Perpetual Calendar, of which the following is a full, clear, and exact description.

This invention relates to a new and useful perpetual calendar, which is adapted to be controlled by a clock or any other source, so that it will indicate the day of the week, the day of the month, and the month of the year.

An object of this invention is to provide a device which will automatically control the displaying of the days of the month for months of different length, and includes means for controlling the exhibition of twenty-eight and twenty-nine, during the month of February, in the proper years.

Another object of this invention is to provide a units-indicating member and a tens-indicating member, for designating the days of the month, means for normally operating said members, and means for permitting the units-indicating member to remain stationary at the end of the month, while the tens-indicating member is advanced by a normally inactive means.

A still further object of this invention is to provide a device which will be simple in construction, strong, durable, positive in its operation, and with the fewest parts consistent with good workmanship.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a vertical side view in section, showing the operating mechanism; Fig. 2 is a vertical side view in section, taken on the opposite side to the view shown in Fig. 1; Fig. 3 is a vertical front view in elevation, with the casing removed to show the underlying parts; Fig. 4 is an enlarged side view in elevation, showing the mechanism for regulating the length of the month; Fig. 5 is a vertical side view in elevation, illustrating diagrammatically the mechanism on

the month roll for controlling the regulating mechanism illustrated in Fig. 4; and Fig. 6 is an enlarged detail view similar to Fig. 4, showing another position of the parts, and also illustrating the method of operating the tens-indicating member at the end of the month.

Referring more particularly to the separate parts of the device, 1 indicates a suitable support or frame, which is inclosed in a suitable casing 2 provided with a plurality of openings 3, 4 and 5 in the front thereof. These openings 3 to 5 may be closed by any suitable transparent material, such as glass panes 6. Within the casing 2 and secured upon a shaft 7, which is rotatably supported in the frame-work 1, there is provided an indicating member 8, which may be of any suitable form, such as a roll inscribed with the days of the week, and is preferably located directly opposite to the opening 3 in the casing 2. Below the indicating member 8, as clearly illustrated in Fig. 3, there is provided a similar indicating member 9, on which are inscribed the months of the year, and which is secured on a shaft 10 rotatably supported in the frame 1 in such a manner as to bring the indicating roll 9 directly opposite to the opening 4 in the casing 2. Below the months roll 9, as clearly illustrated in Fig. 3, there is provided a units-indicating member 11, which is secured on a shaft 12, which in turn is rotatably supported in the frame-work 1. Concentric with the shaft 12, there is provided a sleeve 13, to which is secured in any well-known manner a tens-indicating member 14, which is preferably in the form of a roll having two sets of numerals from 1 to 3 inscribed thereon, the sets being spaced apart by blank spaces. The shaft 12 is adapted to be rotated in a manner to be described hereinafter, and in turn rotates a gear 15 which is secured thereon in any well-known manner and which meshes with a gear 16 rotatably supported on a stub-shaft 17, which in turn is supported on the frame 1. The gear 16 is provided with a sleeve 18, to which is secured a crank 19, on the end of which is provided an engaging roller 20. The roller 20 is adapted to engage between the teeth on a gear 21 which is secured on the sleeve 13. By this means, when the indicating roller 11 is rotated one complete revolution, the tens-indicating roll 14 will be advanced one point, so as to bring the next figure or blank space directly in front of the

opening 5 in the casing 2. The gear 21 as shown in Fig. 2 is prevented from accidental movement by means of a spring detent 22, which is secured to the framework 1 in any well known manner, and engages between the teeth on the gear 21. The shaft 12, and thus the units-roll 11, is prevented from accidental rotation by means of a spring detent 23, which is secured to the frame 1 in any well-known manner, and engages a ratchet wheel 24 secured on the shaft 12. In order to positively rotate the shaft 12, there is provided on the outer end thereof a gear 25, which meshes with pins 26 on a gear wheel 27 rotatably supported on a shaft 28. In order to rotate the gear 27, there is provided as shown in Figs. 1 and 3 a motor 29, which may be of any suitable form, but is preferably in the form of a power spring, which is secured at one end on the shaft 28, and at the other end on the framework 1; at 30. The gear wheel 27 is operatively connected to the shaft 28 and thus to the power spring 29, by means of pawls 31, which are pivotally secured to the gear 27 and engage the teeth on a ratchet wheel 32 which is secured to the shaft 28. This connection permits the power spring to be wound up without operating the gear 27 and the rest of the mechanism.

Rotatably secured on the shaft 28 (see Fig. 3) and positively connected to the gear 27 by any suitable means, such as connections 33, there is provided an escapement wheel 34, which is formed with a plurality of notches or slots 35, preferably thirty-one in number, and spaced equally distant from each other except at one point, which is indicated at 36, where a slightly greater space between the notches is provided, for a purpose to be described hereinafter.

By referring to Fig. 3, it will be seen that the gear 27 meshes with a pinion 37 secured on a shaft 38, which is journaled in a supplementary frame 39 connected to the main frame. Secured to the shaft 38 and rotated thereby, there is provided a gear 40, which meshes with a pinion 41 secured on a shaft 42, which is rotatably supported in the frame 39. Also secured on the shaft 42, there is provided a gear 43, which has secured to it and the shaft 42 a suitable twin cam-disk 44, the cams of which are separated by suitable drop-spaces or notches 45. The gear 43 meshes with a pinion 46 secured on a shaft 47, which is rotatably supported in the framework 39. Also secured on the shaft 47, there is provided a gear 48, which meshes with a pinion 49 secured on a shaft 50, which is journaled in the frame 39 in any well known manner. The shaft 50 also has secured thereon a fan 51, which retards and regulates the movement of the train of gearing just described.

In order to prevent the mechanism from

rotating until desired, there is provided a lug 52 on the gear 48, (see Figs. 1 and 3) which is adapted to be engaged by a stop 53 secured to a rock-shaft 54, which is rotatably supported in the frame 39. Also secured to this rock-shaft 54, and adapted to be rotated thereby, there is provided an escapement pawl 55, which is bent and formed at its lower end so as to better engage in the slots 35 in the escapement wheel 34. In order to swing the escapement pawl back and forth, there is provided an arm 56, which is secured at one end of the rock-shaft 54, and at the other end has a turn-over portion which engages the cam-disk 44. By this means, when the mechanism operates, the escapement pawl 55 is swung back and forth, until, on its downward stroke, its extremity is in exact alinement with one of the slots 35 in the escapement wheel 34. In order to start the mechanism in operation, there is provided a second rock-shaft 57, which is rotatably supported in the framework 39, and has secured thereto a spring arm 58, which engages at one end under the escapement pawl 55, and is adapted to lift this pawl out of the notch in the escapement wheel 34. When the escapement pawl 55 is lifted, it rotates the rock-shaft 54 and removes the stop 53 away from the lug 52, thereby permitting the mechanism to rotate. The mechanism, however, is prevented from rotating any considerable distance, until the rock-shaft 57 has been rotated back to its original position, by means of a stop-arm 59, which is adapted to engage the lug 52 when in its raised position. The rock-shaft 57 is operated by a lever 60, which is secured thereto at one end, and which in turn is operated by a lever 61 through a connecting link 62, which is pivotally connected at each end to the levers 60 and 61. The lever 61 is secured to a shaft 63, which is rotatably supported in the frame 1 and extends to the opposite side thereof, where it is provided with an armature 64 located adjacent the poles of a plurality of magnets 65 and adapted to be operated thereby. These magnets may be electrically connected to a suitable time-clock, or to a suitable source of manual control, or to both. The lever 61 may be also operated from a suitable time-clock by means of a link 66, which is pivotally connected at one end to the lever 61, and at the other end, may be connected to any suitable cam mechanism in a time-clock which will operate once in twenty-four hours.

For the purpose of operating the day-of-the-week-indicating roll 8, there is provided on the end of the shaft 7 as will be seen by reference to Figs. 1 and 3 a ratchet-wheel 67, which is operated by a pin 68 on a link 69 pivotally connected to the lever 61. In order to prevent the accidental rotation of

the indicating-member 8, there is provided a spring detent 70, which is secured to the frame 1 at one end, and engages between the teeth of a sprocket-wheel 71 at the other end, which is secured in any well known manner to the shaft 7. In order to prevent the lever 61, through its connecting link 69, from advancing the indicating member 8 more than one day at a time, there is provided an escapement lock 72 on the lever 61, which is brought in contact with the teeth of the ratchet wheel 67 when the lever 61 is operated.

Having described the general operating mechanism, I now come to one of the more important features of my invention, which relates to the means for controlling the operation of the units and tens-indicating members, so that they will display the proper day of the month for each month, no matter what its length. For this purpose, there is provided, as is shown most clearly in Figs. 1, 4 and 6, a guard 73, which is pivotally secured at one end to the escapement wheel 34, and provided at the other end with a portion 74, which is of the proper size and form, and so located, as to extend alongside of notches 75, 76 and 77, in the escapement wheel 34, and thereby prevent the lower-extremity of the escapement pawl 55 from falling into any and all of these notches. The notches 75, 76 and 77 correspond to the stopping points of the twenty-ninth, thirtieth and thirty-first days of the month. In order to bring the guard 73 in position at the proper time to cut out the proper number of days at the end of the month, there is provided a cam 78, which is pivotally secured to the shaft 28, and held in its lowermost position against a stop 79 by means of a spring 80, which is secured to the escapement wheel 34 at one end, and engages the cam 78 at the other end. The cam 78 is provided with three pegs 81, 82 and 83, one of which is adapted to be engaged by a trip 84, according to the position of the latter. The various positions of this trip and the guard 73 are indicated by the full and dotted lines in Fig. 4. The trip 84 is secured at one end to a shaft 85, which extends across the front of the device, and is rotatably supported in the frame 1. This shaft 85 is provided with an arm 86, which is held in contact with any one of a plurality of pins 87 on the side of the month-indicating member 9, by means of a counter-weight 88, which is secured in any well known manner to the shaft 85. There is provided one of the pins 87 for each month of the year with the exception of the month of February. These pins are located at various distances from the peripheries of the indicating-roll 9, according to the length of the month to which they correspond. The pins corresponding to the months of greatest length, such as January, March, May, July,

August, October and December, are located nearest to the periphery of the roll 9. The pins corresponding to the months having thirty days are located somewhat nearer the center of the roll 9. For the month of February, there is provided a gear 89, which is rotatably secured in any well known manner to the roll 9, and engages an idle gear 90, which in turn meshes with a pinion 91 journaled on the shaft 10 and secured against rotation by means of a member 150, which is secured in any well known manner on the frame, whereby the gear 89 is caused to rotate once in every four revolutions of the shaft 10 and the indicating roll 9. That is to say, it rotates once in four years. The gear 89 is provided on its face with four pins 92 and 93, which, when located at their greatest distance from the shaft 10, engage the arm 86, and thereby form stops limiting the downward movement of the arm 86. The pins 92 correspond to the ordinary years, and to a month of twenty-eight days, and therefore permit the arm 86 to fall in its greatest distance. The pin 93, however, corresponds to leap year, and is located, when in its outermost position, at a distance intermediate a position corresponding to a twenty-eight-day month, and a position corresponding to a thirty-day month, thereby permitting the arm 86 to fall into this position. It will thus be seen, by referring to Figs. 4 and 5, that when the month of February approaches its end during an ordinary year, the arm 86 will have fallen inwardly to its greatest extent, thereby causing the trip 84 to assume its lowest position, as indicated in the full lines in Fig. 4. In this position, the trip 84 will engage the peg 83, causing the cam 78 to force the guard 73 up into a position alongside of the notches 75, 76 and 77 before the escapement wheel 34 is rotated to a position in which the notch 75 will have been located under the escapement pawl 55. In the case of leap year, however, the pin 93 on the gear 89, will occupy its outermost position, preventing the arm 86 from falling to its extreme lowermost position, but permitting it to fall to its next lower position, as indicated by the position of the trip 84 in the lowest dotted lines in Fig. 4. In this position, the trip 84 is adapted to engage the peg 82 on the cam 78, raising the guard 73 somewhat later than when the trip 84 engaged the peg 83, but just in time to prevent the escapement pawl 55 from falling into the notches 76 and 77, but too late to prevent it from falling into the notch 75. The rollers 11 and 14 will thereby be permitted to indicate a month of twenty-nine days, and will skip the thirtieth and thirty-first, and jump to the first day of the next month on the next operation of the device. In the case of a month of thirty days, such as September, the arm 86 will

engage one of the pins located second nearest to the periphery of the roll 9, permitting the arm 86 and the trip 84 to fall to a position somewhat higher than the position caused by the pin 93. In this position, the trip 84 will engage the peg 81 and raise the cam 78 and the guard 73 in time to prevent the escapement pawl 55 from falling into the notch 77, but not sufficiently early to prevent this pawl from falling into the notches 75 and 76. In the case of the longest months, such as December, the arm 86 will engage one of the pegs 87 nearest to the periphery of the roll 9, thereby holding the arm 86 and the trip 84 in their highest position, in which the trip 84 will not engage any of the pegs 81, 82 or 83, but will slip by, allowing the escapement pawl 55 to drop into each of the notches 75, 76 and 77, thereby permitting the day-of-the-month rolls 11 and 14 to indicate a month of thirty-one days.

Another important point, which will now be described, relates to the mechanism for permitting the units-roll 11 to remain stationary while the tens-roll 14 is being rotated at the end of the month, thereby doing away with the necessity of having an extra numeral 1 on the units-roll 11. This arrangement permits the use of a much larger figure for the same sized-roll, thus adding to the ease with which the device may be read, without increasing its size.

Referring more particularly to Fig. 6, when the escapement pawl 55 is in the notch 77 corresponding to the thirty-first day of the month, the gear 25 on the shaft 12 will be opposite a blank space, indicated at 94 in the series of pins 26, which form a gear on the gear 27. Thus, when the escapement wheel 34 advances to the first day of the month; that is, to a position in which the escapement pawl 55 will drop into one of the notches 35, indicated at 95, which correspond to the first day of the month, the gear 25 will not be operated by any pin 26 on the gear 27. Thus, the shaft 12 will not be rotated, and the indicating rolls 11 and 14 will not be rotated by this means. In order to rotate the tens-roll 14, however, there is provided a stud 96 on the back side of the gear 27, which is adapted to engage on a curved arm 97 secured to a rock-shaft 98, which extends across the device, and is rotatably supported in the frames 1 and 39. Secured on the opposite end of the rock-shaft 98, there is provided a lever 99, which has pivotally secured thereto a pair of spring pawls 100 and 101, as more clearly illustrated in Fig. 2. The pawl 100 engages a ratchet wheel 102 secured on the shaft 10, to which the month-roll 9 is also secured, and is adapted to rotate the month-roll thereby. The month-roll 9 and the ratchet-wheel 102 are prevented from accidental ro-

tation by means of a spring detent 103, which engages the ratchet-wheel 102. The pawl 101 engages at its lower end with the gear-wheel 21 on the sleeve 13, whereby the tens-indicating roll 14 is rotated without rotating the units-roll 11. In order that the stud 96 may have a sufficient swing in operating the lever 97, the space 36, previously mentioned, between the notch 77 and the notch 95 in the escapement wheel 34 corresponding to the last and first days of the month, is made considerably greater than the space between the other notches, so that the escapement pawl 55 will not lock the escapement wheel 34 until the stud 96 has swung clear of the arm 97.

The operation of the device will be readily understood from the above description. The lever 61 is operated either by the magnet 65 or the connecting link 66, from a suitable source, such as a time-clock. The lever 61 advances the day-of-the-week roll 8 one point, bringing the next day opposite the opening 3, and simultaneously raises, through the links 62 and the lever 60, the escapement pawl 55 and the stop 52. The mechanism then starts to rotate, due to the power in the spring 29, but is permitted to rotate to only a limited extent because of the fact that the stop 59 comes in contact with the peg 52 as long as the lever 61 is raised. As soon as the lever 61 is dropped, the device continues to operate, and the escapement pawl 55 is swung up and down by the cam 44 and the arm 56, until its lower end comes in alinement with one of the slots 35 in the escapement wheel 34. When this occurs, the mechanism is brought to a stop. During this time, the gear 27, by its connection through the pins 26 and the gear 25, has rotated the shaft 25 a fraction of a revolution, bringing the next numeral in the units-roll opposite the space 5 in the casing 2. This operation is repeated once in every twenty-four hours, and when the units-roll 11 has been rotated a complete revolution, the tens-roll 14 will have been rotated by the shaft 12 through the gears 15 and 16, the crank 19 and the gear 21 on the sleeve 13. When the mechanism approaches the end of the month, the units-roll will be advanced three, two or one numerals, according to the length of the month displayed opposite the opening 4 in the casing 2. Each operation is controlled by the arm 86 and the trip 84 cooperating with the cam 78 and the guard 73, as fully described above. When the device reaches the end of the month; that is, when the escapement pawl 55 occupies a position corresponding to the notch 77, the stud 96 on the next operation of the device will operate the lever 97, thereby manipulating the lever-arm 99, causing the pawl 100 to rotate the month-roll one step, bringing the next month oppo-

site the opening 4 in the casing 2, and also causing the pawl 100 to operate the tens-roll 14, leaving the units-roll 11 stationary, with the numeral 1 still opposite the opening 5 in the casing 2. This operation is continued perpetually, year after year, bringing the proper days of the week and month, and month of the year, opposite the openings in the casing.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a calendar, the combination with a plurality of indicating members, of means for rotating one of said members intermit-
15 tently, means for advancing another of said members at each complete revolution of said first-mentioned member, and additional means for advancing said second-mentioned member periodically.

2. In a calendar, the combination with a plurality of indicating rollers having characters inscribed thereon, of means for rotat-
25 ing one of said rollers intermittently, means for advancing another of said rollers at each complete revolution of said first-mentioned roller, and additional means for advancing said second-mentioned roller periodically.

3. In a calendar, the combination with a month-indicating member, of a day-indicating member, mechanism for controlling said last-mentioned member, and means on said first-mentioned member for controlling said
35 mechanism.

4. In a calendar, the combination with a shaft, of an indicating member secured to said shaft, a sleeve on said shaft, an indicat-
40 ing member secured to said sleeve, and means operated by said shaft adapted to operate said sleeve.

5. In a calendar, the combination with a shaft, of an indicating member secured to said shaft, a sleeve on said shaft, an indicat-
45 ing member secured to said sleeve, means operated by said shaft, adapted to operate said sleeve, means for operating said shaft, and means independent of said shaft operated by said last-mentioned means adapted to
50 operate said second-mentioned indicating member.

6. In a calendar, the combination with a shaft, of an indicating member secured to said shaft, a sleeve on said shaft, an indicat-
55 ing member secured to said sleeve, a gear on said shaft, a gear on said sleeve, and mechanism operatively connecting said gears.

7. In a calendar, the combination with a shaft, of an indicating member secured to said shaft, a sleeve on said shaft, an indicat-
60 ing member secured to said sleeve, a gear on said shaft, a ratchet gear on said sleeve, mechanism operatively connecting said
65 gears, means for operating said shaft, and

means operated by said last-mentioned means adapted to operate said ratchet gear independent of said shaft.

8. In a calendar, the combination with a shaft, of an indicating member secured to said shaft, a sleeve on said shaft, an indicat-
70 ing member secured to said sleeve, means operated by said shaft, adapted to operate said sleeve, means for operating said shaft, a stud on said last-mentioned means, an
75 arm operated by said stud, a rock-shaft connected to said arm, an arm operated by said rock-shaft having a pawl thereon, and a ratchet wheel on said sleeve adapted to be
80 operated by said pawl.

9. In a calendar, the combination with a shaft, of an indicating member secured on said shaft, a sleeve on said shaft, an indicat-
85 ing member secured to said sleeve, a gear on said shaft, a ratchet gear on said sleeve, mechanism operatively connecting said gears, means for operating said shaft, a stud
90 on said last-mentioned means, an arm operated by said stud, a rock-shaft connected to said arm, and an arm operated by said
95 rock-shaft, having a pawl thereon adapted to operate said ratchet gear.

10. In a calendar, the combination with a plurality of indicating members, of means for rotating one of said members intermit-
95 tently, means for advancing another of said members at each complete revolution of said first-mentioned member, additional means for advancing said second-mentioned member
100 periodically, and means operated by said last-mentioned means, adapted to advance still another of said indicating members.

11. In a calendar, the combination with a plurality of indicating members, of means
105 for rotating one of said members intermittently, means for advancing another of said members at each complete revolution of said first-mentioned member, additional means
110 for advancing said second-mentioned member periodically, and means for operating a plurality of others of said indicating members.

12. In a calendar, the combination with a motor shaft, of a motor on said shaft, a gear
115 driven by said motor, a shaft driven by said gear, an indicating member secured to said last-mentioned shaft, a sleeve on said last-mentioned shaft, an indicating member se-
120 cured to said sleeve, a gear on said last-mentioned shaft, a gear on said sleeve, and driving connections between said last-mentioned gears.

13. In a calendar, the combination with a motor shaft, of a motor on said shaft, a gear
125 driven by said motor, a shaft driven by said gear, an indicating member secured to said last-mentioned shaft, a sleeve on said last-mentioned shaft, an indicating member se-
130 cured to said sleeve, a gear on said last-men-

tioned shaft, a gear on said sleeve, driving connections between said last-mentioned gears, and means connected to said first-mentioned gear adapted to periodically operate said last-mentioned indicating member independent of said first-mentioned indicating member.

14. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a notch corresponding to each day of the month, a pawl co-acting with said notches, to stop said wheel, a guard for preventing said pawl from engaging in one or more of said notches, a cam for operating said guard, and means on said month-indicating member for controlling the operation of said cam.

15. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a notch corresponding to each day of the month, a pawl connected with said notches to stop said wheel, a guard for preventing said pawl from engaging in one or more of said notches, a cam for operating said guard, a trip for operating said cam, and means on said month-indicating member for controlling said trip.

16. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a notch corresponding to each day of the month, a pawl co-acting with said notches, to stop said wheel, a guard for preventing said pawl from engaging in one or more of said notches, a cam for operating said guard, a trip for operating said cam, and pins on said indicating member for controlling said trip.

17. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a notch corresponding to each day of the month, a pawl co-acting with said notches, to stop said wheel, a guard for preventing said pawl from engaging in one or more of said notches, a cam for operating said guard, a plurality of pegs on said cam, a trip for engaging said pegs, and pins on said month-indicating member for controlling said trip.

18. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a stopping point corresponding to each day of the month, a pawl co-acting with said stopping

points, to stop said wheel, and a gear rotated by said month-indicating member, for controlling said pawl periodically.

19. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a stopping point corresponding to each day of the month, a pawl co-acting with said stopping points to stop said wheel, a gear rotated by said month-indicating member, and unsymmetrically located pins on said gear for controlling said pawl periodically.

20. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a notch corresponding to each day in the month, a pawl co-acting with said notches to stop said wheel, a guard for preventing said pawl from engaging in one or more of said notches, and a gear rotated by said month-indicating member for controlling the operation of said guard.

21. In a calendar, the combination with a month-indicating member, of a day-of-the-month indicating member, and means for controlling the latter from the former, comprising an escapement wheel having a notch corresponding to each day of the month, a pawl co-acting with said notches to stop said wheel, a guard for preventing said pawl from engaging in one or more of said notches, a gear rotated by said month-indicating member, and pins located on said gear for controlling the operation of said guard periodically.

22. In a calendar, the combination with a day-of-the-week indicating member, of a month-indicating member, a day-of-the-month indicating member, means for operating said members, and means for controlling the operation of said last-mentioned member from said second-mentioned member, comprising an escapement wheel having a stopping point corresponding to each day of the month, a pawl co-acting with said stopping point to stop said wheel, and means for preventing said pawl from locking in one or more of said stopping points.

23. In a calendar, the combination with a day-of-the-week-indicating member, of a month-indicating member, a day-of-the-month indicating member, means for operating said members, and means for controlling the operation of said last-mentioned member from said second-mentioned member, comprising an escapement wheel having a notch corresponding to each day in the month, a pawl co-acting with said notches to stop said wheel, and a guard for preventing said pawl from engaging in one or more of said notches.

24. In a calendar, the combination with a day-of-the-week indicating member, of a month-indicating member, a day-of-the-month indicating member, means for operating said members, and means for controlling the operation of said last-mentioned member from said second-mentioned member, comprising an escapement wheel having a stopping point corresponding to each day in the month, a pawl co-acting with said stopping points to stop said wheel, a guard for preventing said pawl from locking in one or more of said stopping points, a cam for operating said guard, a trip for operating said cam and pins on said month-indicating member for controlling said trip. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. BOILLOT.

Witnesses:

HORATIO WHITING,
JOHN P. DAVIS.