(No Model.) 2 Sheets—Sheet 1.

W. J. ELSOM.

CALENDAR.

No. 395,385. Patented Jan. 1, 1889.

Fig. 1.

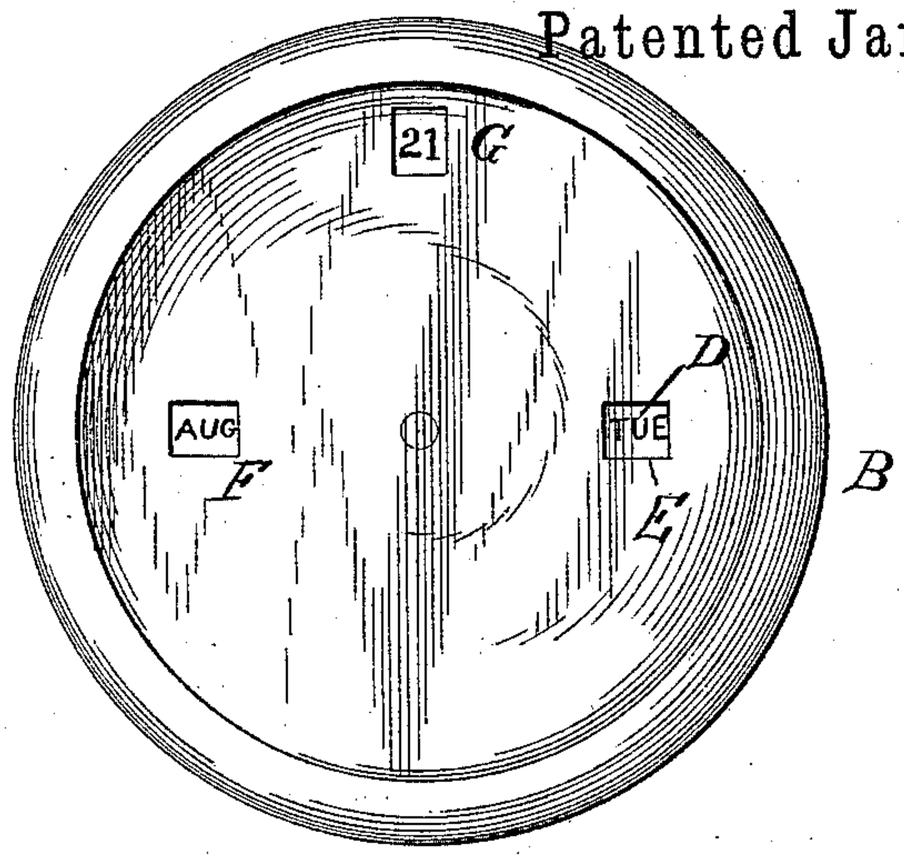


Fig. 2.

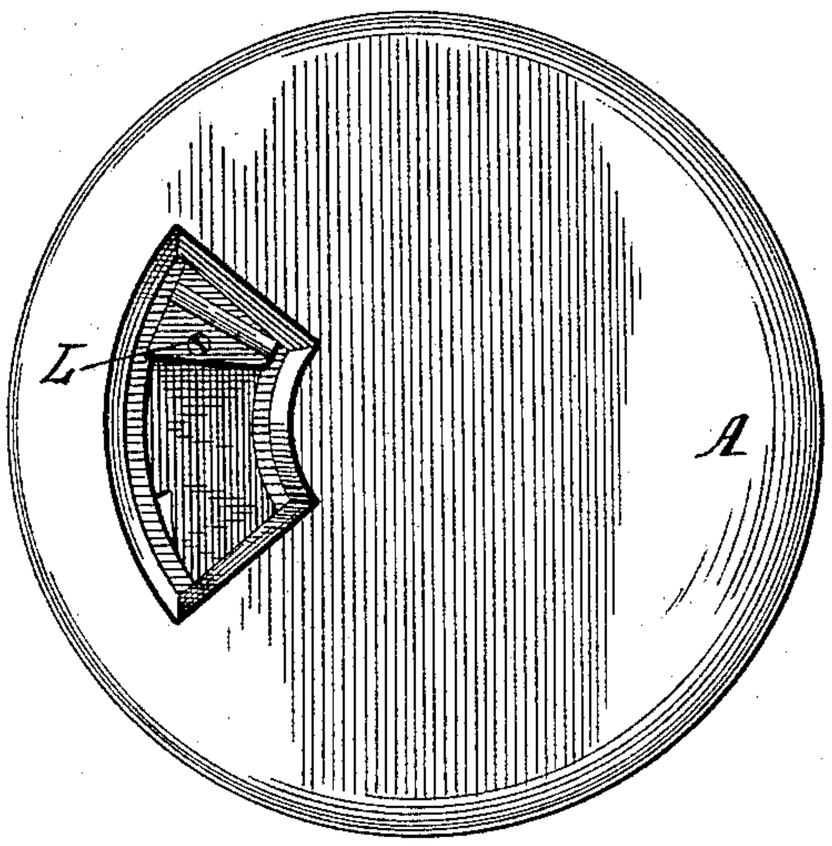
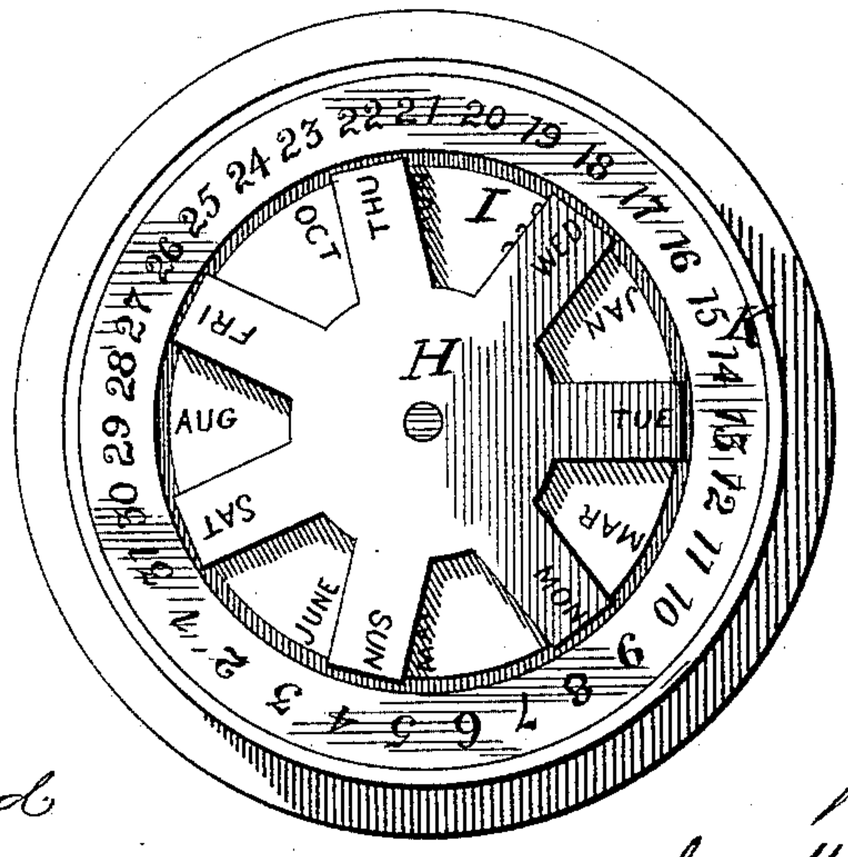


Fig. 3.



WITNESSES
F. L. Durand
L. W. Bartlett.

INVENTOR
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(No Model.) 2 Sheets—Sheet 2.

W. J. ELSOM.

CALENDAR.

No. 395,385. Patented Jan. 1, 1889.

Fig 4

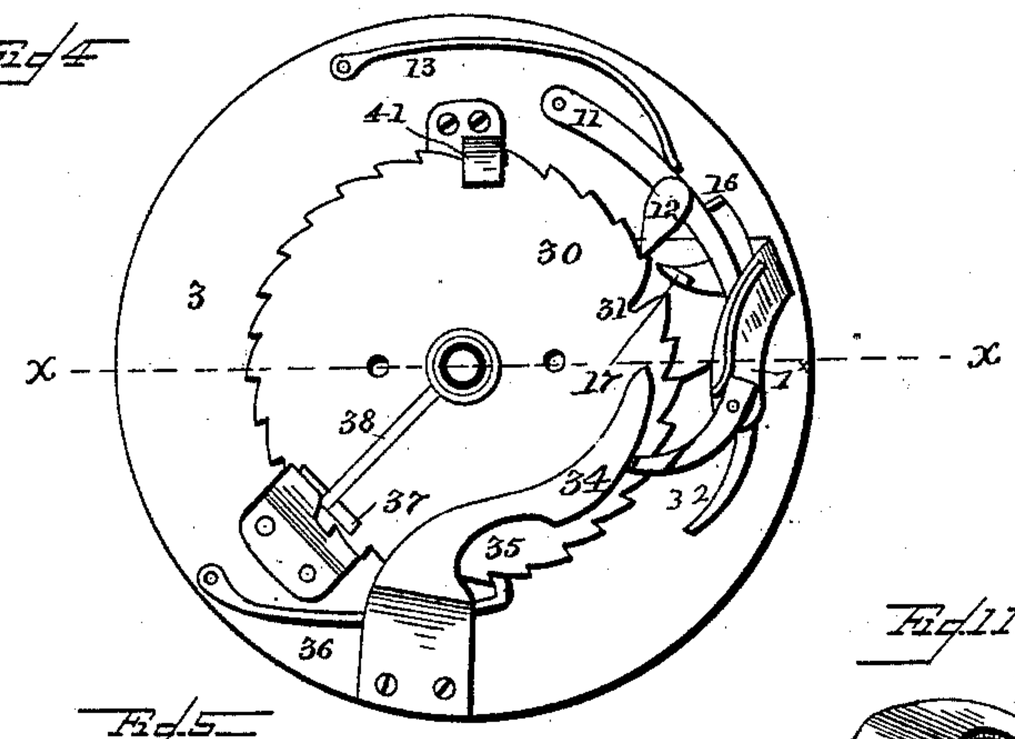
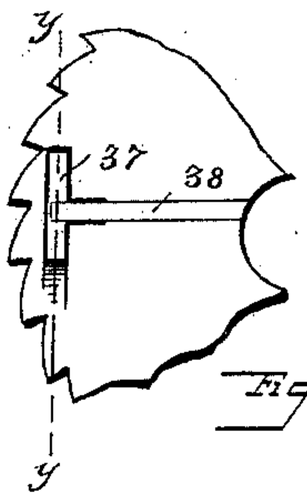


Fig. 3.



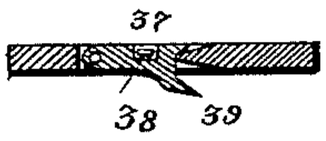


Fig. 5

Fig. 11.

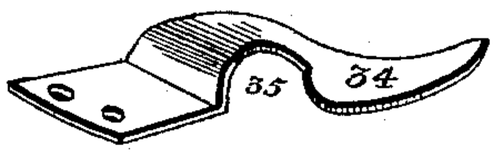
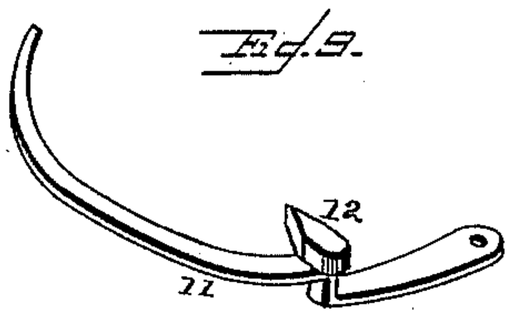


Fig. 9.



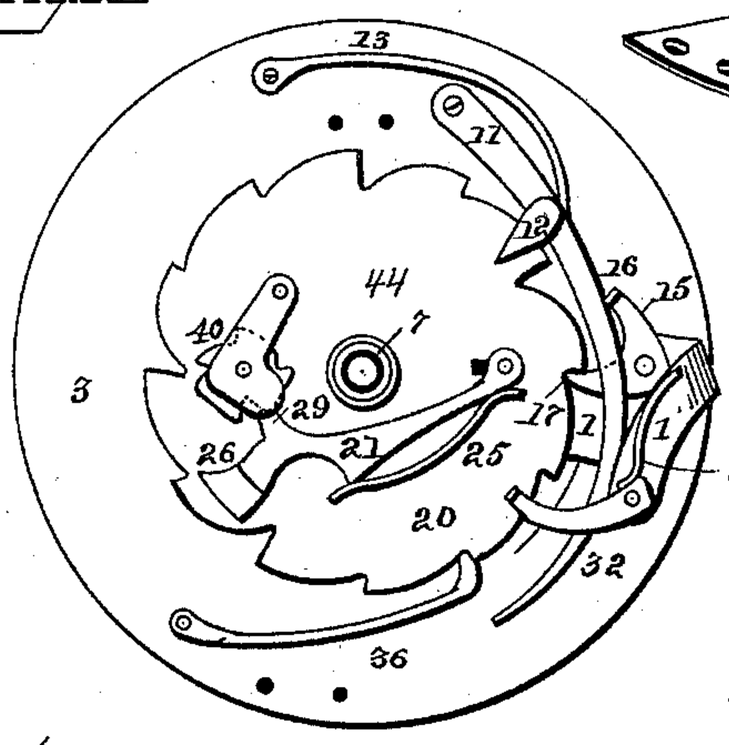


Fig. 12.

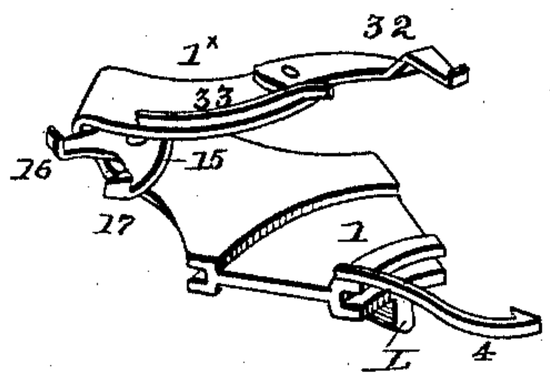


Fig. 6.

Fig. 10.

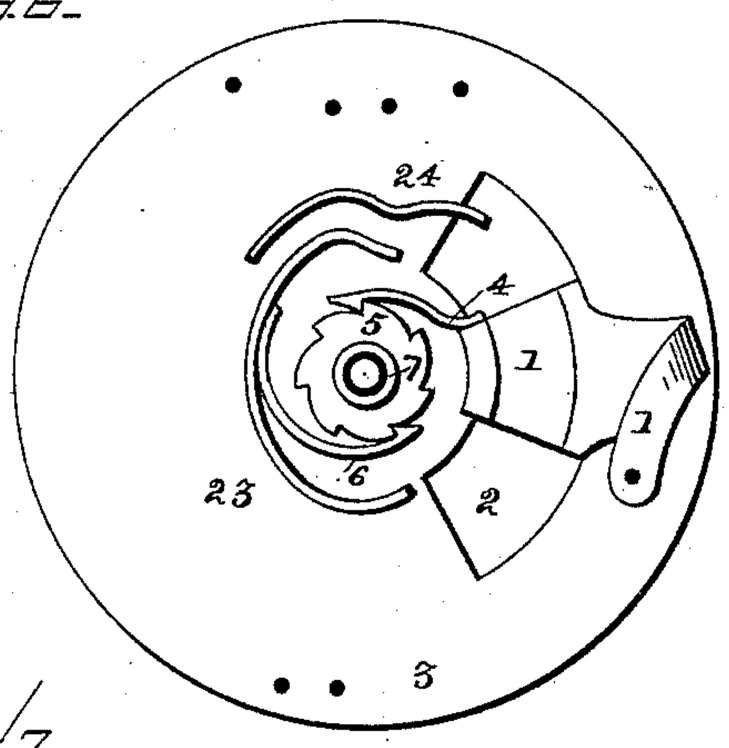
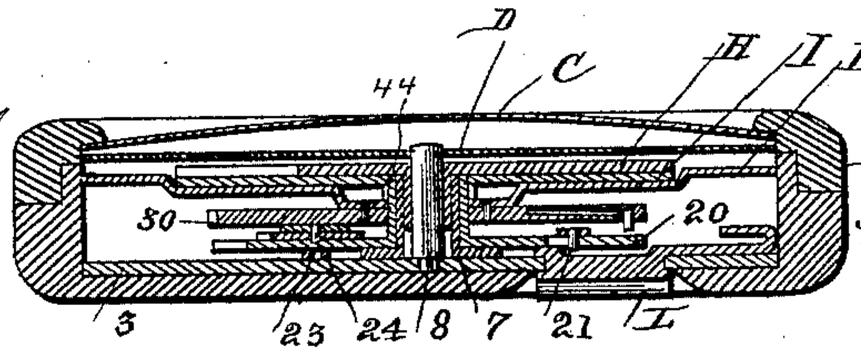


Fig. 7.

WITNESSES

F. L. Ourand

J. R. Coleman



INVENTOR

Wm J Elsom

Wallace A. Bartlett

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM J. ELSOM, OF CORTLAND, NEW YORK.

CALENDAR.

SPECIFICATION forming part of Letters Patent No. 395,385, dated January 1, 1889.

Application filed September 15, 1888. Serial No. 285,500. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. ELSOM, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Calendars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to calendars of the class known as "rotating calendars," and may be used as an attachment for a clock or for a pocket or desk calendar.

The object of the invention is to produce a calendar which shall operate with certainty by means of a trip or catch.

The invention consists in the construction and combination of parts as hereinbefore pointed out.

Figure 1 is a front view showing the dial, with perforations through which the index portion of the calendar appears. Fig. 2 is a rear view showing the operating catch or handle. Fig. 3 is a front view with dial removed. Fig. 4 is a section with dial removed, showing the ratchet and connections by which the disk bearing numerals 1 to 31 is rotated. Fig. 5 is a section showing the ratchet-and-pawl mechanism by which the disk bearing names of the month is rotated. Fig. 6 is a section showing the ratchet-and-pawl mechanism for turning the star-wheel bearing the names of the days of the week. Fig. 7 is a central cross-section on line $x\,x$, Fig. 4, showing the relative arrangement of the parts. Figs. 8 to 12 are details and broken sections of parts of the operating mechanism.

A indicates the casing, which is preferably round to make a convenient pocket-calendar, but may be of other form convenient for attachment to a clock or for use on a desk.

B denotes the cover or bezel of the calendar, which carries the crystal C, when such is used, and the dial D. The dial may be ornamented in any desirable manner, and is perforated, as at E, Fig. 1, to expose the name of the day of the week, at F to show the name of the month, and at G to show the day of the month. Of course these perforations may be arranged at any suitable part of the dial, the index-wheels being made to correspond.

The day-index H is in form of a star-wheel and is nearest the dial. This star-wheel H has seven points or arms, each arm being the name of the day of the week. Behind the star-wheel H is a disk, I, bearing the names of the months. These names will be exposed between the arms of the star-wheel H, and will thus be exposed through perforations F in the dial, when in register therewith. A disk, K, concentric with disk I and star-wheel H, and preferably offset centrally to receive said disk and star-wheel, has the numbers of the days of the month (1 to 31) in a ring surrounding the disk and star-wheel.

The disks I and K are made to rotate intermittingly in opposite directions by means of handle or catch L, working in a slot in the back of the case, and intervening mechanism, now about to be described.

The handle L is attached to a sector, 1. This sector has notched edges, which grasp the sides of a sector-shaped slot, 2, in the base-plate 3 of the calendar. The inner edge of the sector 1 has a spring-pawl, 4, which engages a seven-toothed ratchet-wheel, 5. The ratchet 5 is held from backward movement by a spring-pawl, 6. The wheel 5 is connected to a collar, 7, which is free to rotate on central post, 8, and the collar is attached by a firm frictional contact (or may be by a pin or by solder) to the star-wheel H. By swinging or reciprocating the sector 1 in its slot the ratchet-wheel 5 may be moved notch by notch, and will thus move the star-wheel. Thus each movement of the handle L back and forward will move the star-wheel far enough to expose a new arm in front of the opening E in the dial. The sector 1 has a loop, 1^x, turn d back from its outer edge toward the center of the dial, leaving room for the interposition of the guide-pawl 11, which pawl 11 is bow-shaped and pivoted at its outer end to the base-plate 3. The guide-pawl 11 has a tooth, 12, which rides on the outside of ratchet-wheel 30, except where a notch, 31, permits the tooth 12 to approach nearer the center of said wheel 30, the guide-pawl being pressed in by spring 13. The tooth 12 holds ratchet-wheel 30 from backward movement. A hook-pawl, 15, pivoted to sector 1 has an outer bearing, 16, against the outer curved surface of guide-pawl 11, and has its tooth or hook 16 in position to engage the teeth of ratchet

20 when the guide-pawl swings in as tooth 12 enters notch 31, but otherwise will not engage said ratchet 20.

The ratchet 20 is connected to collar 44, which is attached to the disk I. The teeth on ratchet 20 face in opposite directions from the teeth on ratchets 5 and 30. The hook-pawl 15 is able to move the ratchet 20, and consequently the disk bearing the names of the month only when the pawl-guide 11 has its tooth in notch 31, or once for each revolution of the disk I, and this movement is when the handle L is moving in reversed direction from that required to move ratchet 5.

The ratchet-wheel 30 is concentric with stud or post 8, and is attached directly to the disk K, bearing the numbers 1 to 31. The ratchet 30 has thirty-one teeth, and is actuated by the spring-pawl 32, pivoted on the turned-over portion 1^x of the sector 1. This pawl is pressed toward said ratchet-wheel by spring 33, but is prevented from engaging the teeth of the ratchet 30 by a bearer, 34, save at a part, 35, where said bearer is cut away. Consequently the pawl 32 will revolve the ratchet 30 at each reciprocation of sector 1 only so far as the notch 35 permits it to do, unless dog 37 engages 36 or 26, when two or more spaces are moved. The holding-tooth 36 prevents backward movement of the ratchet 20 by frictional contact.

The ratchet 20 carries an oscillating piece, 21, having a pin, 22, passing through a slot in said ratchet-wheel. This pin engages the switch-bars 23 and 24 on the plate 3. The pin 21 is held in contact with the switch-bars by spring 25.

The switch-bars are shaped to press the oscillating piece 21 so that its head 26 shall be in position to engage the dog 37 on wheel 30 whenever the number of days in the month varies from the normal. The dog 37 is pressed down by springs 38. (A top view of the dog and a section on line *y y* are shown in Fig. 8.)

A projection, 29, on the oscillating piece 21 bears on a four-toothed wheel, 40, carried by ratchet 20. As the ratchet 20 rotates but once a year, this four-toothed wheel will rotate but once in four years by engagement with a projection or stud, 41, on the base-plate.

The projection 26 will by the wheel 40 be thrown into a different position every fourth year from that in the other years, and the switch 23 24 will not shift the projection 26 to the same position in leap year as in other years.

Holding tooth or spring 36 prevents backward movement of ratchet-wheel 20. Deeper notches in the edges of wheel 20 permit this tooth 36 to move inward far enough to engage dog 37 on ratchet-wheel 30 for months with thirty days. The ratchet-wheel 20 is thus held while wheel 30 moves one notch.

It will be understood that the handle of the calendar may be connected with a clock mechanism by a link in usual manner, or that the calendar may be set daily by hand or by the starting of an engine or machine.

What I claim is—

1. The combination, in a calendar, of a base-plate provided with a sectoral slot, a handle, constructed as described, to reciprocate in said slot, ratchet-wheels mounted concentric to said slot and connected to indicating-plates, and pawls on the handle to engage said ratchets, as set forth.

2. In a calendar, a rotating disk bearing numbers and a ratchet connected thereto, a disk bearing names of days connected to a ratchet having its teeth facing in opposite direction from the other ratchets, and a reciprocating handle having pawls to engage all the ratchets when moving in one or the other direction.

3. The combination, in a calendar, of a ratchet connected to an indicating-plate and having a notch in its periphery, a curved guide-pawl having a tooth to enter said notch, a reciprocating handle having a pivoted pawl resting against the guide-pawl, and a ratchet-wheel in position to be acted on by said last-mentioned pawl, substantially as described.

4. In a calendar, a ratchet and a month-indicating disk connected thereto, a second ratchet and a plate bearing the numbers of the days connected thereto, a dog in one of the ratchets, and a shifting-piece connected with the other ratchet controlled by a switch in the supporting-plate, whereby the two ratchets may turn together when the shifting-piece is in engagement with the dog, the elements in combination as set forth.

5. In a calendar, the combination of a month-indicating disk and a ratchet mechanism to rotate the same in one direction, a plate bearing numbers and a ratchet for moving in the opposite direction, a dog connected to one ratchet and a shifting-piece to the other, a switch controlling said shifting-piece, and a four-toothed wheel bearing on the shifting-piece, all substantially as described, whereby the ratchets are coupled together at certain times under the influence of the dog and shifting-piece, as set forth.

6. In a calendar, the combination of a ratchet and a wheel carrying the names of days connected thereto, a ratchet having a different number of teeth and a number-indicator connected thereto, a reciprocating handle and separate pawls carried thereby to engage both ratchets, and a bearer against which one of the pawls rests during a part of its movement, whereby the ratchets are moved independently and to different distances by the same movement of the handle, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. ELSOM.

Witnesses:

JOHN W. SUGGETT,

ANNA D. ELSOM.