

UNITED STATES PATENT OFFICE.

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CALENDAR.

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To all whom it may concern:

Be it known that I, JOSEPH WALLIN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Calendar, of which the following is a full, clear, and exact description.

My invention relates to improvements in perpetual calendars, which are adapted to indicate the name and date of days in a week, and also the months of a year in chronological order, and has for its objects to provide a novel device of the character indicated, which by proper manipulation will display the name of the day, its date, as well as the name of the month, and automatically re-adjust working parts, so as to adapt the mechanism to register correctly for months having an uneven number of days.

To these ends my invention consists in the peculiar construction and combination of parts as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective front view of the device; Fig. 2 is a front view of the calendar with the front wall of its case removed, exposing interior parts, the case being broken away below; Fig. 3 is an enlarged front view of some of the working parts loosely supported on the case back, the indicating dials being removed and supports therefor in transverse section on the line 3—3 in Fig. 4; Fig. 4 is a vertical section on the line 4—4 in Fig. 3; and Fig. 5 is an enlarged diagram of working parts, some broken away and some in section on the line 5—5 in Fig. 4, showing a particular adjustment of said parts.

There is a preferably rectangular case A, provided for the support within of working parts, which consist essentially of three dials B, C, D, and mechanism connected therewith whereby the dials are rotatably moved upon their supports, as will be explained.

Upon a journal stud bolt *a*, that is secured to the rear wall of the case A, and projects within the same, two ratchet toothed wheels *b c*, are loosely supported, the wheel *b*, that is in direct connection with the stud bolt, having a hub *b'*, that projects from its radial cen-

ter rearward and forward of the circular disk composing said wheel. The forwardly projecting part of the wheel hub *b'*, is tapered slightly and affords rotatable support for the other ratchet wheel *c* as shown in Fig. 4, the last named wheel being furnished with a tapered hub that is projected on its front side, whereon the dial B is held firmly at a proper distance from the wheel *c* by a nut *c'* that engages a forward threaded end portion of the hub, and upon the projecting front end portion of the hub *b'*, the dial C is mounted and secured by a nut *b²*, this dial having a positive attachment upon the hub named, whereby the dial C and ratchet wheel *b*, are adapted to rotate together in the same direction. The dial plate B, is so proportioned diametrically with regard to the dial C, as to project marginally beyond the latter, and on the front side of this marginal portion thirty-one days of a month are consecutively indicated, by abbreviations of their names as they are grouped in weeks; and for the sake of uniformity, the name abbreviations of thirty-five days, or five weeks are shown, or spaces are provided for such as are obscured by the dial D, in Fig. 2. The smaller dial plate C, is marked on the front face near its edge, with thirty-one integers that are consecutively arranged from 1 to 31 inclusive. The ratchet-wheels *b c*, are of equal diameter and have each thirty-five teeth to correspond with the divisions on the name wheel B. Upon the portion of the ratchet wheel hub *b'*, that projects toward the rear wall of the case A, there is a volute or spiral spring *d* located, one end *d'* of which is secured to the ratchet wheel *b*, and the other end portion *d²* that is extended outwardly and passes through a guide loop *d³* on the rear wall of the case A, is connected to said wall as at *d⁴* in Fig. 3. There is such a tensional force given to the spring *d*, by its wrapped adjustment upon the hub *b'*, that the stud *d⁵* which projects from the rear face of the ratchet wheel *b*, will be caused to impinge upon the lug *d⁶* on the rear wall of the case A, when there is normal stress on the spring, as indicated in Fig. 5.

Below the dials B, C, a journal stud *e* is forwardly projected from the rear wall of the case A, whereon the ratchet wheel *g* is loosely

supported, said wheel having a forwardly extending hub g' , which sustains the dial plate D, that is secured upon its front end; the ratchet wheel named, having twelve teeth, that correspond to the number of months in a year, the name abbreviations of which are consecutively marked upon the dial D, concentric with the edge of the circular disk forming the same.

10 There is a pull bar E, provided for the proper actuation of the mechanism already described, which bar passes through a slot in the lower wall of the case A, and has a hook h formed on the lower end for its convenient
15 manipulation. The pull bar E is held loosely in contact with the rear wall of the case A, and in an upright position, by two headed pins i, k , that are inserted through the lower slots $i' i^2$, and the upper slot k' respectively.
20 Upon the upper end of the pull bar E, a spring limb m is formed or secured, and at the free terminal of said limb a transverse finger is formed, the latter being adapted to rest upon and across the peripheries of both the ratchet
25 wheels b, c , thus providing a spring dog that will engage the teeth of these wheels. At a suitable distance below the spring dog m , another similar spring dog n , is formed on or affixed to the edge of the pull bar E, so
30 that a laterally extending finger on its upper end, will rest upon the edge of the ratchet wheel g , and engage its teeth successively when the bar is vertically reciprocated. It
35 will be seen that the lower slot in the pull bar E, which is engaged by the pin i , is formed with two parallel portions i', i^2 , that are longitudinal of the bar and are connected at their lower terminals by a transverse slot, the portion i' being longer than the slot i^2 and in
40 vertical alignment with the upper slot k' , as shown in Fig. 3.

There is a spring detent limb o , provided for the wheel c , which successively engages the teeth of this wheel to prevent its turning
45 in the wrong direction, and at p' , a bell crank shaped detent arm p is pivoted below the wheel b , with which it has a hooked engagement, said arm having one of its limbs projected in the path of the laterally projected
50 lug p^2 on the pull bar E, so that a depression of said bar will cause the lug to strike the end of the bell crank limb and rock the upper end of its other limb away from the wheel b , with which it is normally held in engagement by a coiled spring p^3 , that has one end
55 attached to the upright limb of the bell crank and its other end affixed upon the rear wall of the case A.

The pull bar E, is held in elevated adjustment by a spring r , that is coiled at r' , and has one end r^2 secured on the rear wall of the case, the resilient long end portion of said spring bearing against the lower side of an ear r^3 on the bar so as to press it upwardly,
65 and cause the pins i, k , to impinge upon the lower ends of the slots they engage with.

The front wall of the case A, is apertured

at s, u, v , as shown in Fig. 1, the hole s , being opposite the name abbreviations on the dial B, and the aperture u , in front of the row of
70 integers on the dial C, while the third orifice v , is adapted to expose to view successively the name abbreviations or full name of a month as these are brought opposite the hole.

The complete device may be hung upright
75 upon a vertical wall or similar support by the loops w , that will engage projecting nails on the wall, and thus maintain the calendar in proper position for ready reference.

To arrange the parts for effective service,
80 the dials B, C, and D, should be set to place the proper day name, date, and month-name-abbreviation before the sight holes s, u, v , and when the day, name, and date-dials B, C, are to be together shifted, the pull bar E is
85 drawn downwardly until the pin i , strikes the top of the short slot i^2 wherein said pin will be adapted to slide when the spring dog m is in engagement with the wheels b, c , which operation will move both wheels one tooth,
90 and the dials B, C, a corresponding degree, which will place a consecutive day-name-abbreviation and numeral in front of their respective sight holes. After the days of a month have been successively indicated upon
95 the calendar, as stated, the month-indicating dial D, can be moved by sliding the bar E, at its lower end so as to locate the pin i , directly below the longer slot portion i' , as indicated by dotted lines in Fig. 3, and then pulling the
100 bar downwardly, this combined movement will throw the dog m , away from the ratchet wheels b, c , and cause the dog n , to hook upon the teeth of the ratchet wheel g , the downward draft of the pull bar moving said ratchet wheel and
105 the dial D simultaneously, so as to expose another name abbreviation on the latter, before the sight hole v . When the bar E, is depressed as has been explained, to change the month dial D, the vibration of the bar previously
110 effected, will cause the bell crank p to engage its lower limb with the lug p^2 on the pull bar and be rocked thereby, removing the upright limb of the bell crank from engagement with the wheel b . From the manner in which the
115 coiled spring d is attached to the ratchet wheel b , it will be closer wrapped as this wheel is rotatably moved, so that its tensional force will be adapted to instantly rotate the wheel b , in an opposite direction when it is released,
120 thereby returning the name dial B, to its starting point; the reverse movement being arrested when the stud d^5 on the wheel b , abuts upon the lug d^6 , as before explained, the wheel c , being held by its detent o , from
125 a reverse movement; and when the dials are in proper position for the beginning of the new month, the pull bar E is again adjusted to permit it to move the dials B, C, for indication of successive days, as before explained.
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Having thus fully described my invention, I claim as new, and desire to secure by Letters Patent—

1. In a calendar, the combination with a

case, three dials mounted to rotate in the case and expose indications on their faces, and ratchet wheels for the dials, of a pull bar in the case adapted to engage two of the ratchet
5 wheels and move two of the dials together when vertically reciprocated, and to rotate the other dial and its ratchet wheel when laterally swung below the lower end of the case, and then reciprocated, substantially as described.
10

2. In a calendar, the combination with a case, a day name dial and a day date dial each rotatable on a journal stud in the case, a ratchet wheel for each dial on said studs, and
15 a detent for each wheel, of a pull bar vertically movable and reciprocable in the case, and a spring dog on the upper end of said bar adapted to actuate both of said ratchet wheels and their dials, substantially as described.

3. In a calendar, the combination with a case, a journal stud projected within the upper part of the case, two ratchet wheels on said stud and having an equal number of
25 teeth, one wheel being loose on the hub of the other wheel, a day name-dial secured on said hub projection near its outer end, and a date-dial secured on the hub projection of the other ratchet wheel, of a spring detent pawl for each
30 ratchet wheel, a vibratable pull bar adapted to slide vertically in the case, and a spring dog on the top end of the bar adapted to hook onto both ratchet wheels, substantially as described.

4. In a calendar, the combination with a
35 case apertured in its front at three points, a journal stud within the upper part of the case, a day-name-dial and a day-date dial on said stud, a ratchet wheel for the name-dial

and having a projected hub, a ratchet wheel for the date-dial rotatable on the hub of the
40 other ratchet wheel, a spring detent for each ratchet wheel, and a month dial and a ratchet wheel for said dial both rotatable on a stud within the lower part of the case, of an upright pull bar supported to slide and vibrate
45 in the case, and spring dogs adapted to actuate the dials when reciprocated in connection with the ratchet wheels bearing said dials, substantially as described.

5. In a calendar, the combination with a
50 rectangular case, apertured at three points in its front wall, two spaced journal studs within the case, two ratchet wheels with hubs one mounted on the other and both rotatable on the upper journal stud, a spring pawl for one
55 of the ratchet wheels, a spring-pressed bell crank, a detent arm on said bell crank engaging the other ratchet wheel, a retracting coiled spring for the wheel engaged by the bell crank detent, a dial plate for each of said ratchet
60 wheels and movable therewith, a ratchet-wheel on the lower journal stud, and a dial plate secured on the hub of said wheel, of an upright pull bar provided with parallel slots near its lower end, joined by a transverse
65 slot, a single slot near the upper end of said bar, two pins seated in the case and engaging said slots, an upper and a lower spring dog on the pull bar, adapted to engage the ratchet
70 wheels, and a lug near the upper end of the pull bar adapted to rock the bell crank detent, substantially as described.

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Witnesses:

FREDRIK PETERSON,
CARL LIND.