C. M. CLINTON & L. MOOD.

Calendar Clocks.

No. 144,384. Patented Nov. 11, 1873.

Fig. 2.

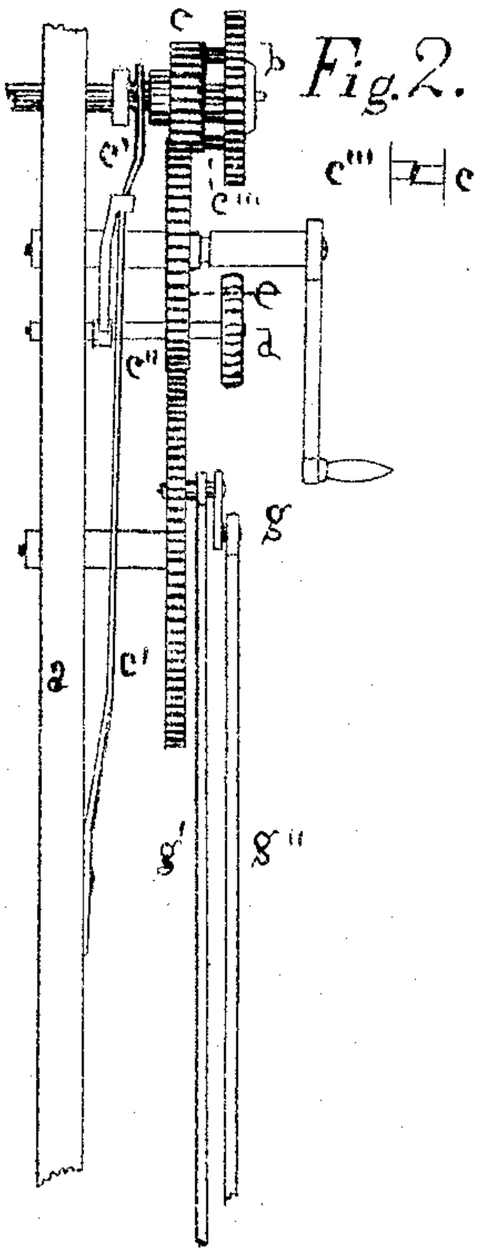


Fig. 1.

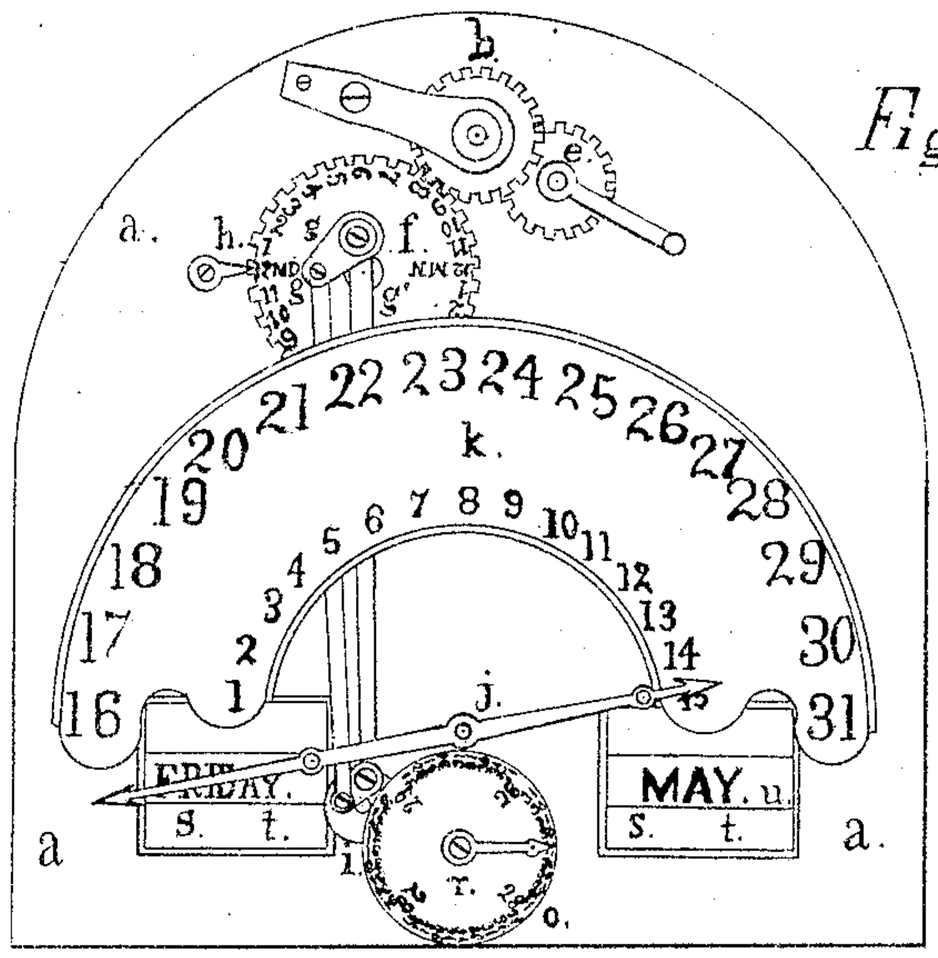


Fig. 5.

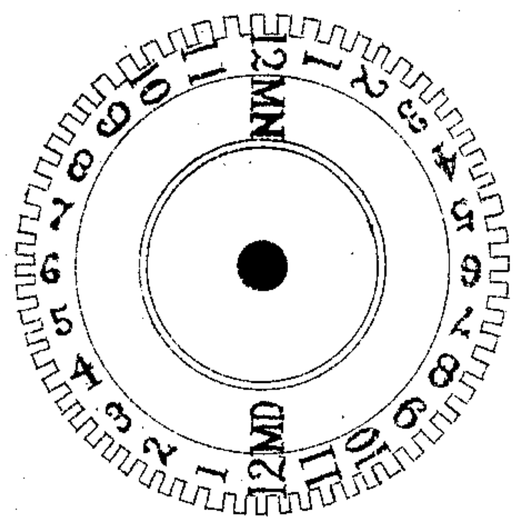


Fig. 6.

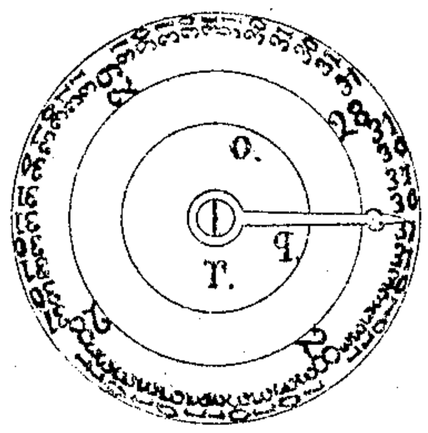


Fig. 3.b.

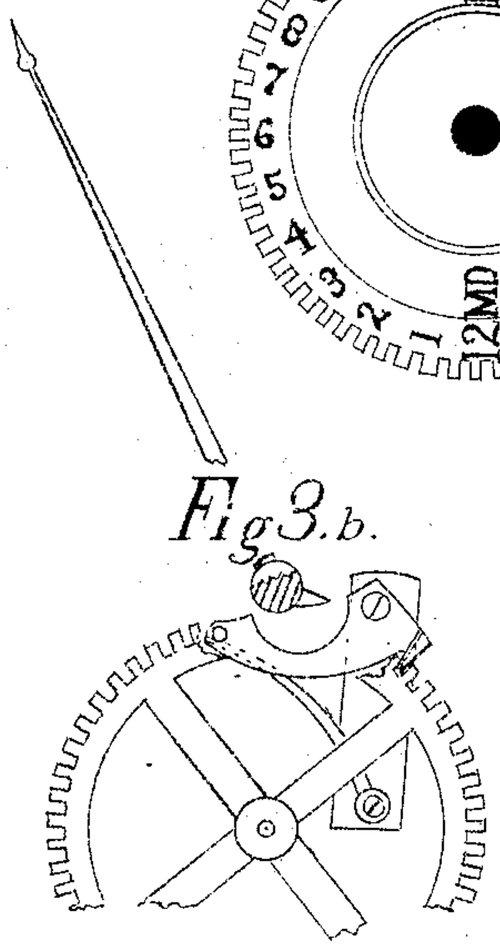


Fig. 4.

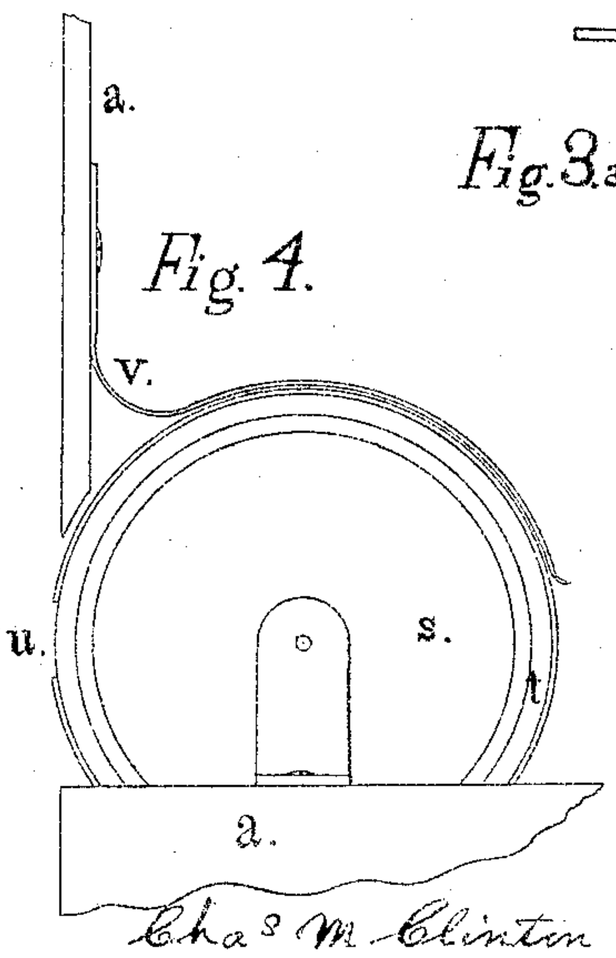
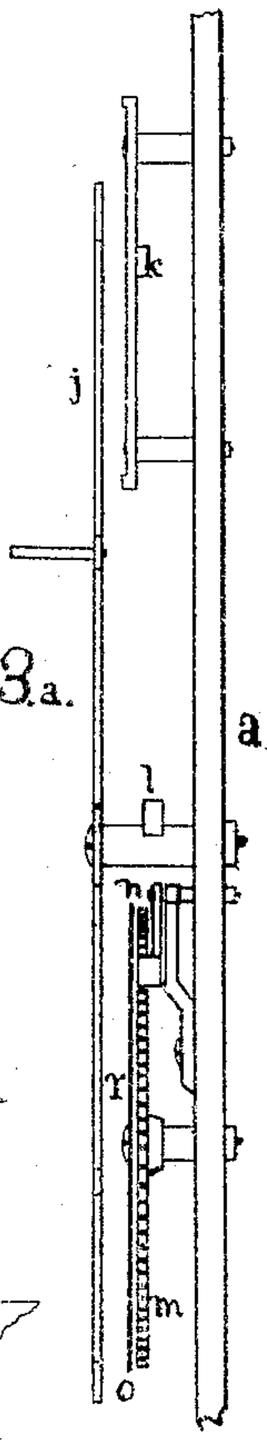


Fig. 3.a.



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UNITED STATES PATENT OFFICE.

CHARLES M. CLINTON AND LYNFRED MOOD, OF ITHACA, NEW YORK.

IMPROVEMENT IN CALENDAR-CLOCKS.

Specification forming part of Letters Patent No. **144,384**, dated November 11, 1873; application filed May 8, 1873.

To all whom it may concern:

Be it known that we, CHARLES M. CLINTON and LYNFRED MOOD, of Ithaca, Tompkins county, New York, have jointly invented certain Improvements in Calendar-Clocks, of which the following is a specification:

The objects we accomplish by our present invention are somewhat supplementary to those granted to us in a patent dated July 9, 1872, and numbered 128,854, as well as to two other patents of previous date, as will be apparent as we describe them; and our invention relates, first, to the detachment of the calendar-movement from the time-movement without displacing any part, so that either can be moved or set independently of the other; second, to an indicator which enables the operator to set, at any hour of the day, the calendar correctly with the time-movement, so that the calendar changes shall take place at midnight; third, to a dial with two rows of figures, and a pointer for the days of the month; fourth, to an indicator for the calendar-setting mechanism, showing the length of each month for four years, including leap-year.

We shall not describe a time-movement, for that is understood, nor describe or figure a complete calendar, as that is understood, as seen in our former patents; but shall show our present improvement only.

Figure 1 is a front view of our devices, arranged substantially as they would be in a full clock and full calendar. Fig. 2 is a side view of our detaching device and setting-indicator. Figs. 3 are detached views of our indicator for the length of the months and the means of its operation. Fig. 4 is an end view of one of our cased rollers with a cylinder about it. Fig. 5 is an enlarged detached view of the disk of our setting-indicator. Fig. 6 is an enlarged view, detached, of the disk of our month-indicator.

In the figures, *a a a* is the supporting-frame, made in any suitable manner, and *b* is a cog-wheel of the time-movement, and preferably is the intermediate wheel between the minute and the hour-hand cog-wheels, and just back of this is the cog-pinion *c*, which has a spring, *c'*, playing in a groove in its hub. A knob, *d*, turns, by the hand of the operator, a cam, *c''*, against the spring *c'*, and thus slides the pinion *c* out of gear with the teeth *c'''*, which projects from the time-movement wheel *b;* and without further detail it will be seen that by a key on the hub of the wheel *e*, which is an intermediate cog to pinion *c* and the disk-wheel *f*, the calendar can be set without disturbing the time-movement, as also the time-movement can be set without moving the calendar. The sides of the clutch-pinion cogs *c* are beveled, and this allows the calendar to be moved forward at any time independently of the time-movement, even without the knob *d;* and the detaching-knob *d* is useful for suspending the action of the calendar, if any cause requires it, while the time-movement moves on.

The connecting-cog *e* connects the pinion *c* with the disk-cog *f*, which disk-cog serves three purposes: First, it completes the teeth necessary to revolve itself once in twenty-four hours; second, it supports and moves the crank *g* and the double rods *g'* and *g'';* and third, it has figures and letters on its face. We need say no more as to the first two of the functions of this wheel *f;* but the use of this wheel *f* as an indicator is accomplished by attaching to any part of the frame *a a a* pointer, *h*, and by dividing the face of the wheel into two halves, and on the outer extremities of the division marking on one side m. d., or midday, and on the opposite side m. n., or midnight, and spacing each half into twelve parts, numbered each 1 2 3 4 5, &c. The crank-pin of the crank *g* is put in the face of this wheel *f* a short distance from the axis of the wheel. By connecting the calendar with this wheel all the changes of the calendar take place at midnight, and the setting of the time-movement to midnight can be done at any hour by the letters and figures on this wheel. The rods *g'* and *g''* connect with the plain disk *i* in the same manner as with the wheel *f*. This disk *i* is the same as the cog-wheel *h* of our patent of July 9, 1872; and for the working of a full calendar see that patent. There is this difference: In the patent just named the shaft of the cog there marked *h* is on a perpendicular shaft, with its screw, cup, and spring. By the use of the rods *g'* and *g''* of this application it is desirable to arrange the disk *i*, and hence its connected parts, on a horizontal shaft, and this is done.

The mechanism between the disk *i* and the

pointer *j* is the same, substantially, as in our patent of July 9, 1872, and needs not to be represented or described. But we now make the pointer *j* with two ends, one of which, the shortest, indicates, on the plate *k*, the figures 1 to 15, and the longest the figures of the outer row, they being the days of the month.

The hub of the pointer *j* has a projecting tooth, *l*, which acts on two parts: First, the cog of forty-eight teeth, *m;* and, second, on its lock *n*. The tooth *l* depresses the lock, and revolves, once a month, the distance of one tooth, the 48 cog. The lock holds the cog from all motion while the tooth *l* is out of gear with the cog.

The 48-toothed cog is no part of the moving mechanism of our calendar, but is added to it beyond and independent of it, except as a mere indicator.

The cog has over it the disk *o*, on which are letters and figures. The disk is divided into four quarters, which represent years. Three years or quarters are marked 28, and one 29 for leap year. The quarters are marked in the direction of the revolution of the disk, 31, 30, 31, &c., corresponding with the actual lengths of the months, as they pass the wheel *m* and disk *o*.

Now, suppose that a calendar-clock is to be set going on the 12th day of May, 1873, at 6 o'clock p. m.: First, by the knob *d*, detach the calendar from the time-movement, and set the clock at 6 p. m. Then determine the month and the year, and May is the third month after February following leap-year. By the key on the hub of the wheel *e* (or by a pin at P in the pointer *j*) turn the disk *o* until the pointer *q*, on the immovable stud *r* of the disk *o*, has reached the first 28 after the 29 of the disk. The pointer *q* indicates that the calendar is at February after the February of leap-year, and such is the February of 1873. Now turn the key (or pointer *j*) on, and the figures 31 come next to the pointer *q*, which is March, (1873;) then on again and 30 is reached, or April; then on again and 31 comes to the pointer *q*, or the month of May, (in such years as in 1873,) as is desired. Next, as is described in our patent of June 25, 1867, move the week-roller to Monday, and if necessary the month-roller to May. (See section 10th second page of specification of patent 66,003, of June 25, 1867.) This sets the calendar to all but one of the requirements. Now look at dial *f* and turn by the key on the wheel *e* that dial to the figure "6 past 12 m. d.," or 6 o'clock past midday; and the clock is set to 6 o'clock p. m. of May 12, 1873, and to change at midnight. So of all other hours, days, and months, and years in the same or similar manner.

The week-roller and the month-roller are seen inclosed in glass or other cylinders. The letter S is on the rollers, and they have the glass cylinders *t* about them, rendered opaque by paper, except at the words for the day of the week or name of the month, which are seen at *u*, and when the rollers are thus incased in glass the glass casing is held in place by the spring *v*.

At the right-hand figure of Figs. 3, the tooth *l* is seen just ready to depress the arm *w* of the lock *n*, a spring, *x*, throwing the tooth *n'* into a space between the teeth of the cog *m*, as soon as the tooth *l* has acted.

Without figures and description, it is apparent that the crank *g* and its rods can be attached to other wheels, and even to a wheel used in the time-movement, if desirable; and also, that dials like *k*, and pointers like *j*, can be used in place of one or both of the disks *f* and *o*, and the pointers *h* and *q*. Indeed we are now using them in these places.

The further explanation of the lesser details of the various devices we have described is considered unnecessary, as the advantages and uses of our invention are apparent to those skilled in the art to which it appertains.

We claim—

1. The detaching pinion *e*, arranged between the time-movement and the calendar-movement, substantially as set forth.

2. The wheel *e*, knob *d*, arm or cam *c''*, and spring *c'*, in combination with the detachment ratchet *c*, whereby, by a key or equivalent means, we adjust, either backward or forward, the calender independently of any motion of the time-movement, substantially as set forth.

3. The setting disk or wheel *f*, for the purpose of setting the calendar to the clock at any hour of the day, as described.

4. The stationary or revolving disk *o*, with numbers on it for four years, and a pointer, *q*, either revolving or stationary, when used in combination with the spring-ratchet *c*, for the purpose of setting the calendar to the right year in reference to leap year by the winch on the shaft of the cog-wheel *e*, or equivalent revolving means, substantially as set forth.

5. The dial *k*, arranged with two rows of figures, as described, and its pointer *j*, when made with one long and one short arm, and operating as set forth.

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LYNFRED MOOD.

Witnesses:
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