2 Sheets--Sheet 1.

# C. M. CLINTON & L. MOOD.

## Improvement in Clock-Calendars.

.No. 128,854. Patented July 9, 1872.

Fig. 1.

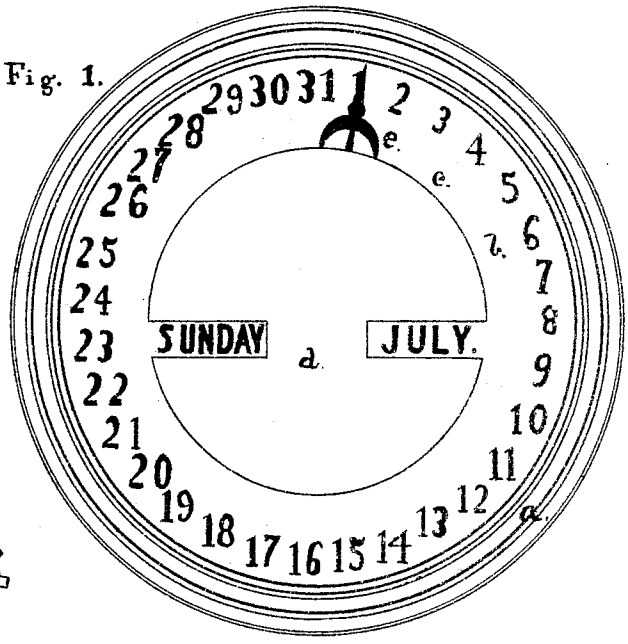



Fig. 5.

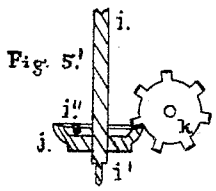
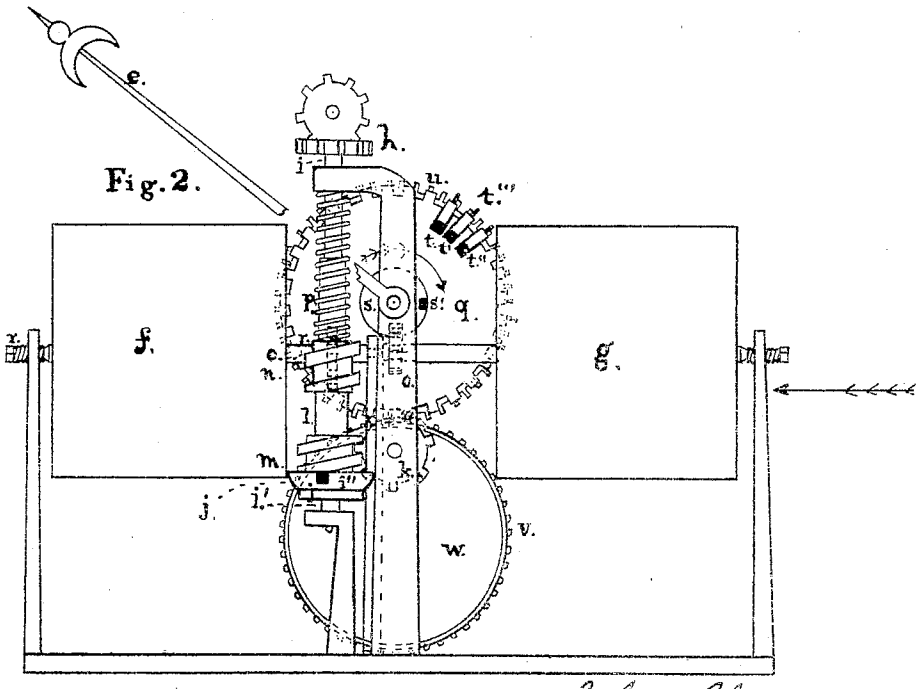



Fig. 2.




Witnesses.

H. J. Whaley.
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C. M. Clinton.
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2 Sheets--Sheet 2.

# C. M. CLINTON & L. MOOD.

## Improvement in Clock-Calendars.

No. 128,854. Patented July 9, 1872.

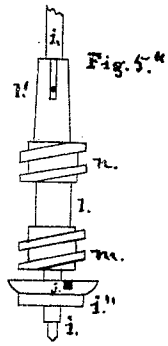


Fig. 5.

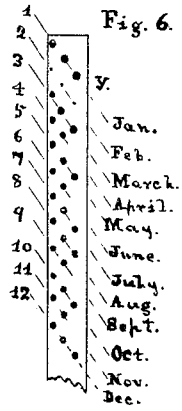


Fig. 6.

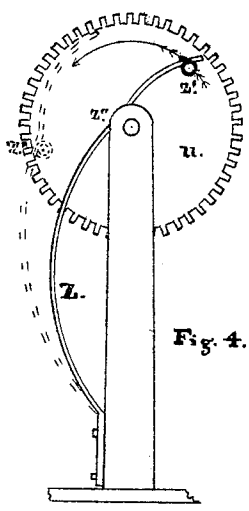


Fig. 4.

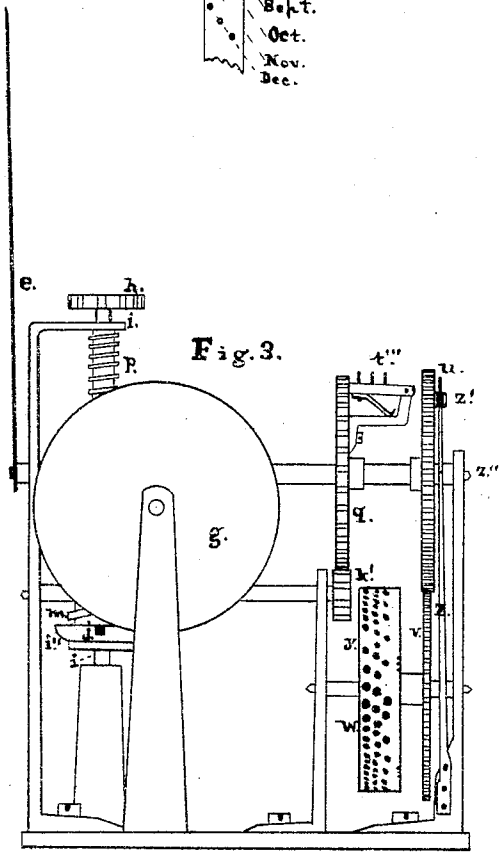


Fig. 3.

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Samuel J. Parker. } Witnesses.

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# UNITED STATES PATENT OFFICE.

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

## IMPROVEMENT IN CLOCK-CALENDARS.

Specification forming part of Letters Patent No. 128,854, dated July 9, 1872.

SPECIFICATION.

*To all whom it may concern:*

A specification describing certain Improvements in Calendar-Clocks, invented by CHARLES M. CLINTON and LYNFRED MOOD, of Ithaca, Tompkins county, New York.

The object of our invention is to make a simple durable calendar, whose changes shall be accurate, and irrespective of the position of the calendar and clock; and our invention relates to the mechanical devices by which these changes are effected, and these will be apparent as we describe our calendar.

Figure 1 is a view of our improved dial-face; Fig. 2, a view of the calendar with face removed. Fig. 3 is an end view from the point indicated by the arrow of Fig. 2. Fig. 4 is a view of the back side of the forty-nine-cog wheel, and of the action of the spring Z on it. Fig. 5 is a section view of the screw-shaft *i*, and the cup-ring fast to it; Fig. 6, a view of a portion of the disk-plate wheel, which removes the superfluous days of the 31-day wheel in certain months.

In Fig. 1, *a* is the frame holding the glass face *b*; and *c* is the row of numbers for the days of the month painted on the glass; and *d*, the center of the glass painted to show at the left hand the day of the week, and at the right hand the month; and *e* is the pointer behind these parts. This arrangement enables any one to open the face to the calendar without detaching any part of the calendar. In Fig. 2, *f* is the day-of-the-week roller and *g* the month-roller, represented in the drawing unlettered, but having one set of words for the day-of-the-week roller and one for the month-roller. At *h* is a wheel which revolves once in twenty-four hours, which, by cogs, or angled universal joint, or other means, connects with the time-piece of the clock, and it is on the top of the shaft *i*; and near the bottom of this shaft is a fixed cup-shaped metallic ring, *i''*, fast to *i*, with one slot, *j*, in it. On the upper edge of this ring rests the tooth of a cog-wheel, *k*, having seven teeth, and this cog-wheel *k* has another tooth in the thread of the lower screw *m* of the double-threaded piece *l*; and the upper screw *n* is in the cogs of a seven-toothed upper wheel, *o*, seen by dotted lines behind the screw *n*; and a spiral spring, *p*, is on the shaft *i*, thrusting down the revolving, but movable, double-coil piece *l* on the ring *i''*. The action of these parts is, that the cog on the edge of the ring *i''* resists the thrust of the spring *p*, and the cogs *k* and *o* cannot turn, while the screw-threads are, by the revolving cog *h*, turned up the height of one tooth each of *k* and *o* without revolving these cogs; but the instant (midnight) the slot *j* comes to the tooth of the cog *k* bearing on the upper edge of the ring *i''* that tooth drops through the slot *j*, and that lets down the screw-piece *l* into the cap of the ring *i''*, when the threads revolve the wheels *k* and *o* one tooth and hold fast these cog-wheels until another tooth of the cog *k* is bearing on the ring *i''*; and thus, at each midnight, these daily changes are made of the week-roller *f*, and of the 31-day wheel *q* and the pointer *e* on its shaft.

While describing this ring, these screw-threads, and spring, and cog-wheel teeth, through a slot in the ring it will be noticed that at *s* is another ring with its slot *s'* and other parts, like those already described, for the purpose of changing at the end of each month the month-roller *g*, with the difference that it is on a horizontal shaft.

Certain other parts are to be noticed, one of which is, that three teeth, *t t' t''*, Fig. 2, of the 31-day wheel *q* are movable. They are hinged (see Fig. 3) with springs under them, and have three small pin-teeth, *t'''*, on the arms, between the teeth and the hinges; and these teeth can be depressed into the slots seen beneath them, (Fig. 2,) as the months of twenty-eight, twenty-nine, and thirty days require. The mechanism which operates these movable teeth is as follows: Back of the 31-day wheel is the plain cog-wheel *u*, (Fig. 3,) of forty-nine teeth, which play in the cogs of a wheel, *v*, with forty-eight teeth, just behind the disk-plate wheel *w*, and all these four wheels—*q*, *u*, *v*, and *w*—move daily in unison with each other. The forty-nine and the forty-eight cogs are for the purpose of properly moving the disk-plate wheel, which has the holes *y* in it for the number of days of each month for a period of four years. The 31-day wheel moves one tooth in twenty-four hours, and the forty-eight cog a distance which need not be accurately stated, only that it is so far that the disk-plate wheel, fast to the same shaft as

the forty-eight cog, has ample space for the holes *y* in it without interfering with each other; and as the 31-day wheel and the forty-nine-cog wheel each revolve twelve times a year it is easily seen that the forty-eight-cog-wheel revolves twelve times and a quarter each year; thus the forty-eight cog and the disk-plate wheel—for example the first year after leap-year—have gained one-quarter of a revolution by the action of the forty-ninth cog of the forty-nine-cog wheel, and the second year a half revolution, and the third year three-quarters of a revolutiion, and the fourth year a whole revolution, and is at the place of beginning, and this while these connected wheels have been changing every day of each year. While this has been going on in a month of thirty-one days, the pins *t'''* on the arms, which hold the movable cogs *t t' t''*, have found three holes in the disk-plate wheel *w*; and in a month of thirty days the pins *t'''* have found two holes in the disk-plate *w*; and in a month of twenty-nine days, or leap-year, one hole; and in a month of twenty-eight days there are no holes at all arranged to let the pins *t'''* through the disk-plate wheel. The plan of this arrangement is seen in the enlarged view given in Fig. 6, which represents the curve of the disk-plate as laid out flatly. The top row of holes is along the line 1, and has three holes, and is for the month of January; the line 2 has no holes, and is for February, of twenty-eight days, and so on to line 12, which is December. Thus the pins *t'''*, by these holes *y*, put the cogs *t t' t''*, Fig. 1, out of the way. But this alone would not cause the four wheels concerned in the length of the various months to revolve; therefore in Fig. 3, and especially in Fig. 4, a spring, *z*, is seen, with an upper curve and a lower curve, and an angle at *z''*, and a pin out of the wheel *u* at *z'*. As the wheel (Fig. 4) revolves, as indicated by the arrow, the pin *z'* strikes the upper curve and lifts the spring to the dotted lines, when the pin *z'* passes the angle *z''* of the spring; and then the action of the spring is to drive on in the direction of the arrow the wheel *u*, and at the same instant the pins *t'''* are in place to be acted on by the disk-plate wheel, or go into the holes *y*, as may be required; and thus the four wheels are, by the spring *z*, moved so that the proper tooth either movable or a fast one, is ever in con, tact with the cogs of the pinion *k*.

The advantages and uses of our invention are apparent to those skilled in the art to which it appertains.

*Claims.*

1. We claim the screw-coils or threads *m*, *n*, and *s*, any one or all of them, for the purpose of moving and holding the cogs, or other part or parts, of a calendar-clock movement through any or all of the calendar changes, substantially as described.

2. We claim the construction of the ring *i''* with a flange on which a cog or other part of a calendar movement rests, and with a slot, *j*, through which a tooth, or equivalent, passes, and with a stop-surface in its cup or cavity for the base of the worm *m* to rest on while the slot *j* is passing one of the teeth of the wheel *k*, substantially as set forth.

3. The double screw-threaded piece *l*, made as described, for changing the day-of-the-week roller and the 31-day wheel, as set forth.

4. We claim the combination of the propelling-spring *z* with the wheels *q*, *u*, *v*, and *w*, for the purpose of moving these wheels forward, substantially as set forth.

5. The disk-plate wheel *w* in combination with the movable teeth *t t' t''*, as described.

6. The combination of the four wheels *q*, *u*, *v*, and *w*, acting together to regulate the length of the months in a calendar movement, as set forth.

7. We claim the glass dial-face *b*, with a clear outer circle, *c*, for the figures of the days of the month, and through which the pointer *e* shows, and with the inner painted or obscured portion *d* so made as to show clear spaces for the day-of-the-week and the month-of-the-year rollers, substantially as set forth.

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Witnesses:
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