(Model.)

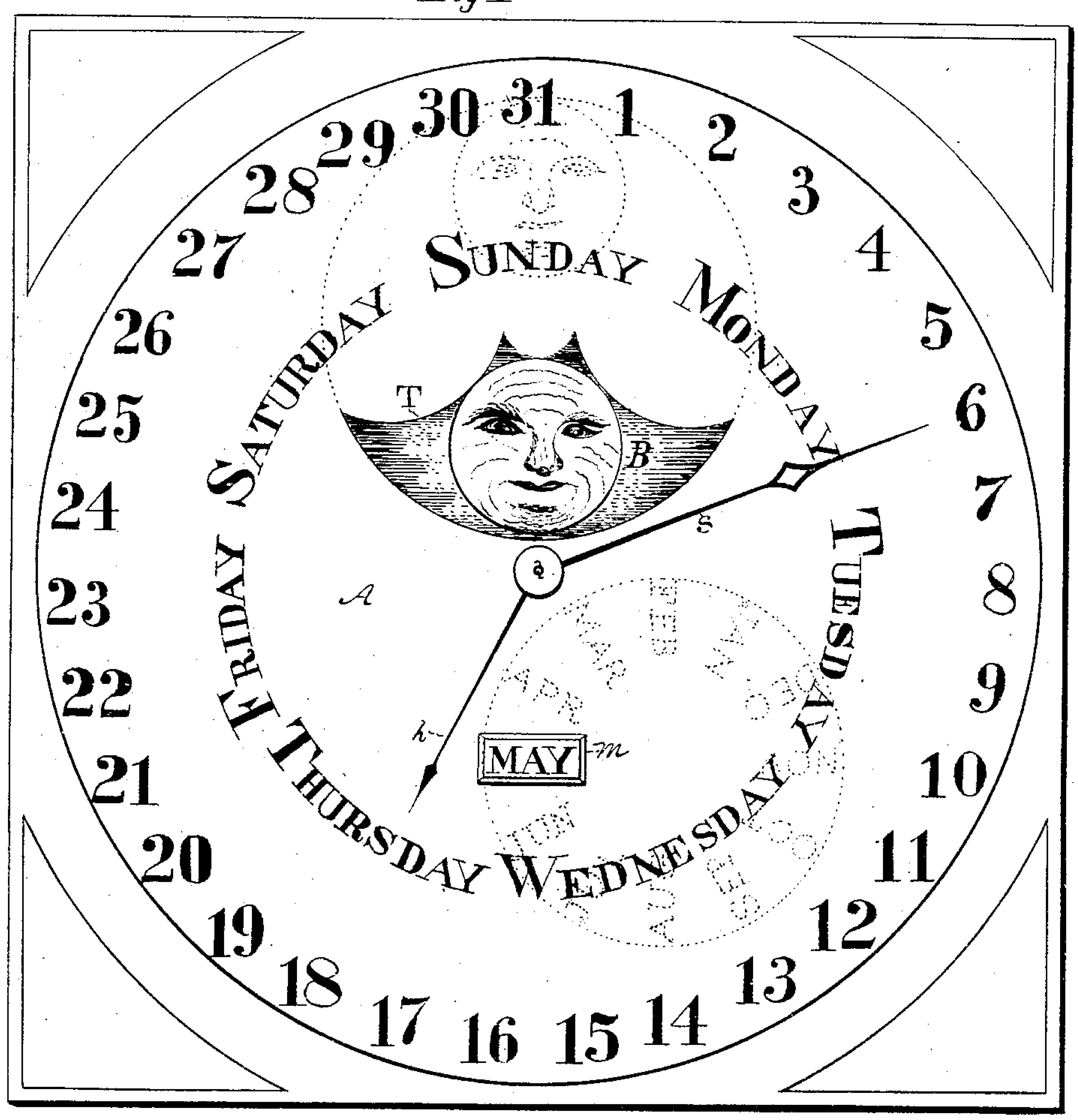
2 Sheets—Sheet 1.

J. K. SEEM.

CALENDAR CLOCK.

No. 309,257. Patented Dec. 16, 1884.

Fig. 1.



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(Model.)

2 Sheets—Sheet 2.

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CALENDAR CLOCK.

No. 309,257.

Patented Dec. 16, 1884.

Fig. 2.

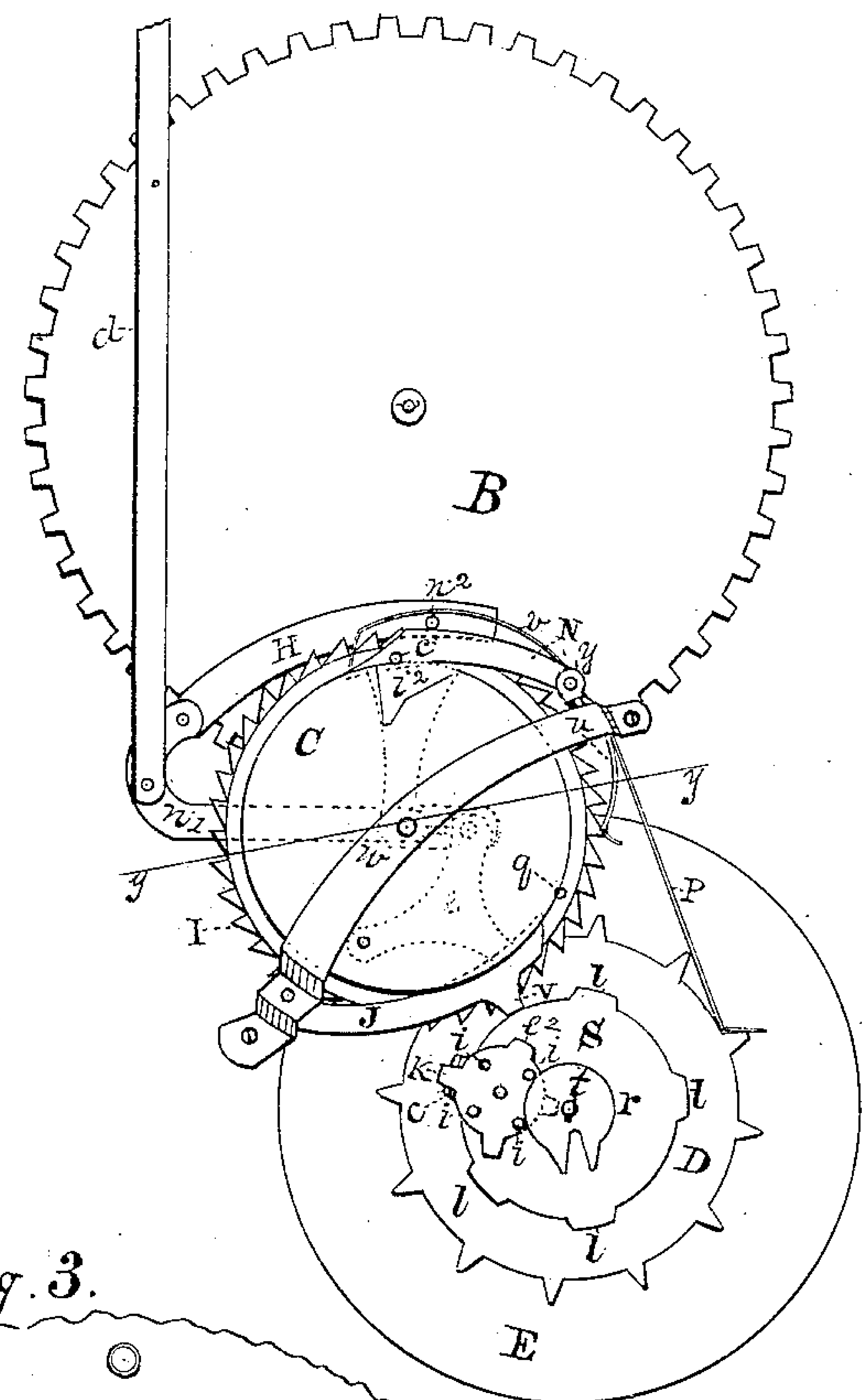


Fig. 3.

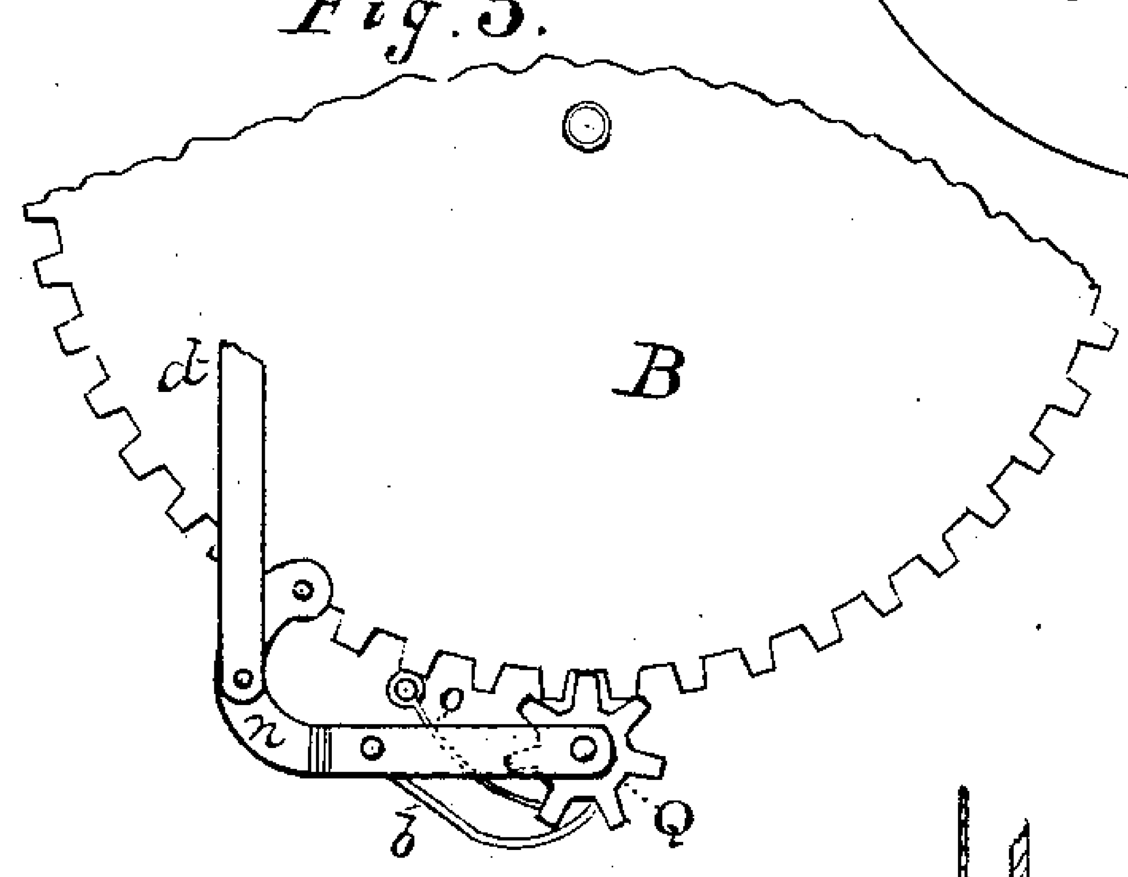


Fig. 4.

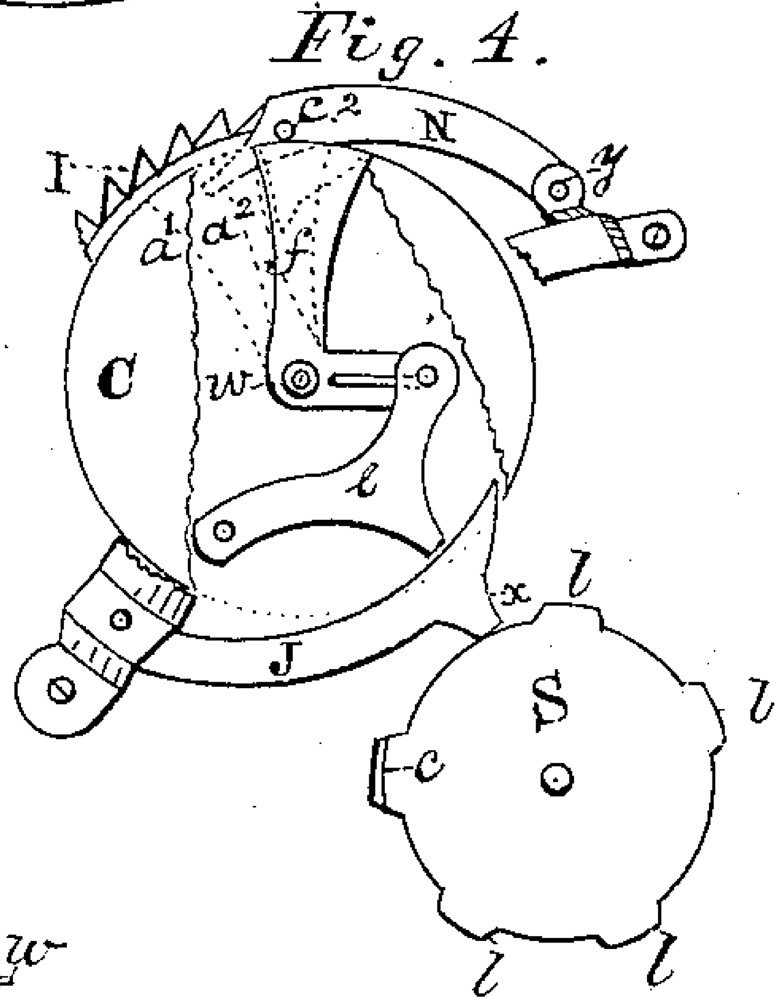
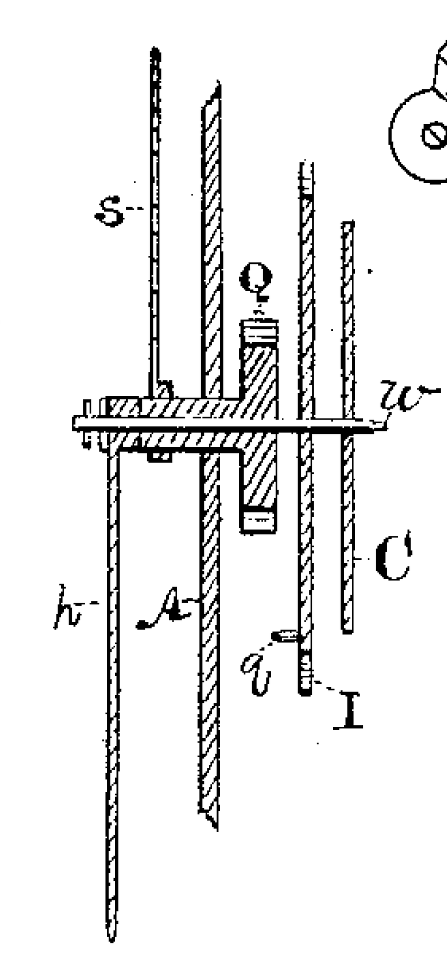


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSIAH K. SEEM, OF PEORIA, ILLINOIS.

CALENDAR-CLOCK.

SPECIFICATION forming part of Letters Patent No. 309,257, dated December 16, 1884.

Application filed October 25, 1883. (Model.)

To all whom it may concern:

Be it known that I, JOSIAH K. SEEM, of Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Clock-Calendars, of which the following is a specification, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature and object of this invention are to simplify the construction of a perpetual clock-calendar so that it can be attached to all kinds of clocks, both old and new; and its novelty consists in certain combinations of its mechanism, which will be fully set forth in the following description and specifically designated in the claims, so as to require no detail or preliminary statement.

In the drawings, A, Figure 1, represents the dial-face of the calendar, having the dates, from the 1st to the 31st, representing the days of the month; also, a window, *m*, through which the name of each month in its turn is shown; also, a window, T, with curved sides in oblique form, through which the moon appears, showing all its changes; also, the names of the week-days, and hands *h* and *s*, which point to the day and its date in each month. Fig. 2 is a plan view of the mechanism of the calendar. Figs. 3, 4, and 5 are detached sectional parts.

Similar letters in each figure represent like parts.

B represents the moon-dial; D, the month-wheel, which has twelve teeth.

E represents the month-dial, which has the names of the months printed on its face. (Shown in dotted lines, see Fig. 1.) I (see Figs. 2 and 4) is the day-wheel, which has thirty-one teeth. S is the index-wheel, which has projections *l l l* and *c*, and by means of the regulator *f*, arms *e* and J, gives each month its required number of days. The mechanism of the calendar operates in the following manner: The connecting-rod *d* is attached at the upper end to an eccentric, which is attached to the sleeve of the hour-hand and arranged so that the eccentric makes one revolution every twenty-four hours. (Not shown). The lower end of the connecting-rod *d* is attached to the bent arm n', which is pivoted to the shaft *w*, and has pivoted to it the pawl H, which has a projecting pin, n^2, near its outer end. When the connecting-rod *d* is drawn up by means of the eccentric, the pawl H moves forward the length of four teeth on the day-wheel I, the pin n^2 resting on the pivoted arm N, which has a projecting pin, c', that rests on the circumference of the disk C. In the downward movement of the connecting-rod *d* the pin n^2 in the pawl H is drawn forward to the end of the arm N, and catches one of the teeth in the day-wheel I, and turns the wheel the distance of one tooth, or one thirty-first of its diameter. This movement of the connecting-rod *d* is repeated once every twenty-four hours until thirty-one days are indicated by the hand *s*. At the next movement the pin *q* in the day-wheel I catches one of the teeth in the month-wheel D, and turns it one-twelfth of its circumference. The month-wheel D has attached to it the month-dial E and index-wheel S, which has attached to it the leap-year-wheel *k*. Consequently, when the month-wheel D is turned one-twelfth of its circumference, it turns the month-dial E, and shows at the window *m* the name of the next month. Also the index-wheel S is turned the same distance; and if the next month is a short month, having only thirty days, one of the projections *l l l* will come under the projecting foot V on the pivoted arm J, and raises the arm J up, which raises up the arm *e*, which, by means of the slot in the regulator *f*, moves it partly from the notch i^2. (Shown in dotted lines a^2 in Fig. 4.) This moving back the regulator allows the arm N, by means of the pin c^2, to drop down on the oblique side of the notch i^2, which movement allows the pin n^2 in the pawl H to catch over two teeth instead of one in the former movement. Consequently, by the next downward movement of the connecting-rod *d*, the day-wheel I is turned the length of two teeth, carrying the pointing-hand *s* from thirtieth to the first of the next month. When the month of February has only twenty-eight days, one of the projecting teeth *i i i* on the leap-year wheel *k* is opposite the long projection *c* on the index-wheel S. (See Fig. 2.) The projecting tooth on the leap-year wheel *k*, being longer than the projection *c* on the index-wheel, raises up the arm J sufficient to move the regulator *f* back off of the notch i^2

in the disk C, so that the pin c^2 in the arm N can drop down sufficient to allow the pin n^2 in the pawl H to catch over the fourth tooth in the day-wheel. Then the next downward movement of the connecting-rod *d* turns the day-wheel I the length of four teeth, carrying the hand *s* from the twenty-eighth, the full number of days in February, to March the first. The leap-year wheel *k* passes around the forked disk *r* once each year, and one of the projecting pins *i i i i* catches into the fork of the disk, which is rigidly attached to the shaft *t*, and turns the leap-year wheel *k* one-quarter round this movement. At the end of every four years, when the month of February appears on the month-wheel E, the short tooth e^2 on the leap-year wheel is opposite the long projection *e* on the index-wheel S, and they are of equal lengths. The projection *c*, on the index-wheel S, being longer than the other projections, raises up the arm J sufficient to move back the regulator *f* a sufficient distance, so that the pin c^2, in the arm N, drops down sufficient in the notch i^2 to allow the pin n^2 to catch over three teeth in the day-wheel I. Then the next downward movement of the connecting-rod *d*, after the hand *s* has registered twenty-nine days, will carry the hand over to the first of March. The moon-dial B is provided with two figure-heads of the full moon, (shown in Fig. 1,) and is operated by the pinion Q. (See Fig. 3.) This pinion has seven cogs representing the seven days of the week. It is loosely fitted to the shaft *w*, and is held in its proper place by the yielding spring *o*, which is attached to the dial A, and when the connecting-rod *d* is drawn up, as heretofore explained, the yielding spring *b*, which is attached to the arm *n'*, is drawn back sufficient to pass over one cog. Then on the downward movement of the connecting-rod *d* the pinion Q, by means of the spring *b*, is turned one-seventh of its circumference, turning at the same time the moon-dial B the distance of one cog. This pinion has an extended hub, which extends through the dial A sufficient to attach the hand *s*, which points to the days of the week. This hand is turned at each movement of the pinion Q from one day to the next. The moon-dial B is turned the distance of one cog each day. When the moon makes its first appearance at the left of the window T, the oblique curve of the window causes the moon to have the form of new moon. Then the first quarter or crescent moon appears at the proper time, then full moon, and last quarter appears as the moon-dial revolves day by day. Then the figure-head passes out of sight, representing dark moon. The day-wheel I and disk C are rigidly attached to the shaft *w*, also the hand *h*, all of which move at the same time. The month-dial E and month-wheel D and index-wheel S are loosely fitted to the shaft *t*, and revolve around it. P and *u* are yielding lock-springs to keep the wheels I and D in their proper positions.

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

1. In a perpetual clock-calendar, the arm *n'*, the connecting-rod *d*, yielding spring *b*, pawl H, having pin n^2 attached, day-wheel I, having pin *q* attached, arm N, having pin c^2, and disk C, having notch i^2 in its circumference, all operating jointly together substantially as shown and described.

2. In a perpetual clock-calendar, the month-wheel D, month-dial F, and index-wheel S, having projections *l l l* and *c*, in combination with the forked disk *r* and leap-year wheel *k*, having projecting teeth and pins *i i i i*, substantially as shown and described, for the purpose set forth.

3. In a perpetual clock-calendar, the arrangement and combination of the day-wheel I, having pin *q*, disk C, having notch i^2, pivoted arm N, having pin c^2, regulator *f*, and pivoted arm *e*, and pivoted arm J, having projecting foot V, substantially as shown and described.

4. In a perpetual clock-calendar, the moon-dial B, having figure-heads printed on its face representing the full moon, in combination with the pinion Q, lever *n'*, yielding spring *b*, yielding lock-spring *o*, and connecting-rod *d*, substantially as and for the purpose set forth.

J. K. SEEM.

Witnesses:

L. J. PRICE,

W. T. PRICE.