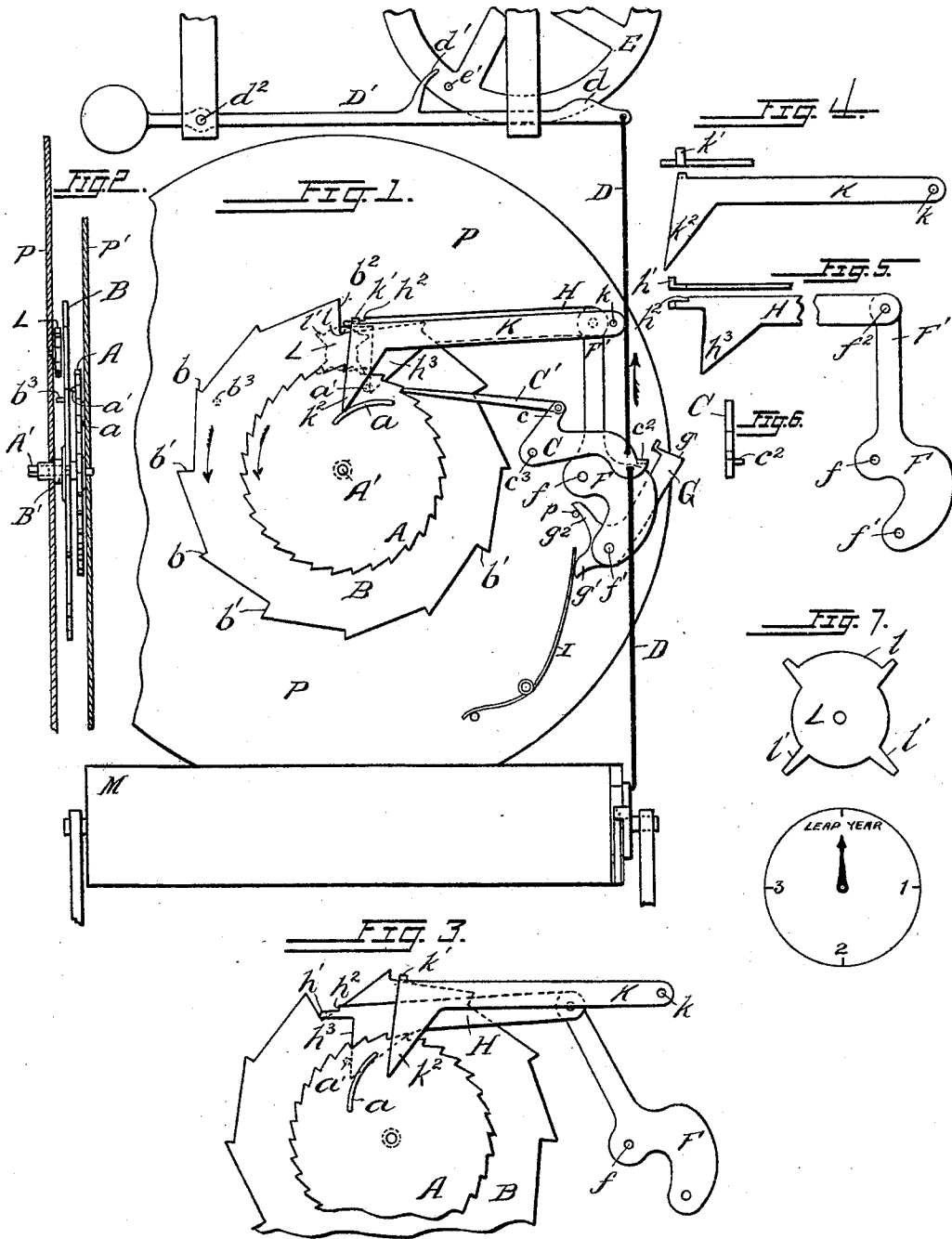


(No Model.)

C. W. FEISHTINGER,  
CALENDAR CLOCK.

No. 527,386.

Patented Oct. 9, 1894.



Witnesses

*E. A. Kelly*  
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CHARLES W. FEISHTINGER, Inventor

By Attorney.

*[Signature]*

# UNITED STATES PATENT OFFICE.

CHARLES W. FEISHTINGER, OF FRITZTOWN, ASSIGNOR OF ONE-HALF TO  
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## CALENDAR-CLOCK.

SPECIFICATION forming part of Letters Patent No. 527,386, dated October 9, 1894.

Application filed October 12, 1893. Serial No. 487,974. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. FEISHTINGER, a citizen of the United States, residing at Fritztown, in the county of Berks, State of Pennsylvania, have invented certain Improvements in Calendar-Clocks, of which the following is a specification.

My invention relates to calendar clocks and my main object is to provide a simple and positive calendar mechanism which will permit the proper setting of either the date, month or year wheels entirely independently of each other.

The setting of the year, month, and date is ordinarily quite troublesome even to an expert, owing mainly to the fact that the several parts are so connected as to be incapable of separate adjustment. I have overcome this objection by providing a construction in which the year, month, and day of the month wheel are each adjustable independently of the others, yet which when properly set are automatically operated by very simple and effective mechanism.

Figure 1 is a rear view of a complete calendar mechanism involving my invention the operating connection to the clock mechanism being also indicated. The rear plate of the calendar mechanism is removed and the parts are represented in proper position for making the leap year movement from February 28 to March 1, the dials however not being shown. Fig. 2 is a partial edge view showing the relative positions of the date, month, and year wheels. Fig. 3 is a partial view similar to Fig. 1, showing the position of the parts after the movement referred to has been made and before the return of the pushing lever to its normal position. Figs. 4, 5, 6, and 7 are separate views of several parts.

No portion of the clock movement is shown except a wheel E from which the calendar movement is effected as will be described later. The calendar mechanism may be attached to the inner face of the door below the clock face so as to be swung out of connection with the operating rod D from the clock movement, and permit convenient access.

A represents the day-of-the-month or date wheel which has thirty-one teeth and a central arbor A' to the forward end of which a pointer may be attached.

B is the month of the year wheel provided with twelve notches of depths varying with the number of days in the several months, the notches  $b'$  for the thirty-day months being twice as deep as the notches  $b$  for the thirty-one day months, and the single notch  $b^2$  for the month of February being four times as deep as  $b$ . Its hollow arbor B' is mounted upon the arbor of the date wheel and may also be provided with a pointer at its outer end or arranged to operate a month dial or roll as preferred.

P and P' are the front and rear plates of the calendar frame, the former being adapted to serve as a dial plate if desired.

The day of the week may be indicated by a roll M operated in any ordinary manner from the clock movement and forms no part of my invention.

The day of the month wheel lever C is pivoted to a fixed point  $c^3$  and connected in any suitable manner to an operating rod D suspended from the clock movement. To the arm  $c$  of this lever is connected a pallet C' through which the daily movement of the day of the month wheel is effected by the lifting of the lever. A rock arm F which is pivoted at a fixed point  $f$ , carries at its upper end F' a push lever H for making the necessary movements at the end of each month. This lever H is provided with a toe  $h'$  which engages and rides upon the notched periphery of the month of the year wheel, and with a heel  $h^3$  which is arranged to engage a projection  $a'$  on the face of the day of the month wheel when the lever is allowed to drop sufficiently to do so. This dropping movement of the lever is controlled in the first place by the depth of the notches in the month wheel and in the second place, for the month of February, by the leap year wheel L the effect of which will be described later. The pushing movement is controlled by a locking arm K which is pivoted at one end to a fixed point  $k$  and is normally supported at the other on the end of the push lever by means of a hanger projection  $k'$  which also serves to prevent any pushing movement of the lever H by its contact with a shoulder  $h^2$  on the top edge of the latter. In order to release the lever and permit the required pushing movement at the end of each month a

cam or incline  $a$  is provided on the face of the date wheel and is so arranged as to engage the heel  $k^2$  of the locking arm and raise it above the shoulder  $h^2$  at the proper time.

5 The pushing movement of the lever H is effected by the rock arm F which is preferably arranged as shown so as to make the movement positive. At a point  $f'$  at the lower end of the rock arm is pivoted a trigger  
10 G the head  $g$  of which is held outside of the swing of the date wheel lever C so long as the lock arm K engages the shoulder  $h^2$  of the push lever; but whenever the latter is released the action of the spring I pushing  
15 against the arm  $g'$  of the trigger moves the rock arm sufficiently to throw the trigger head  $g$  in the path of the ledge  $c^2$  on the date wheel lever,—the arm  $g^2$  of the trigger being fulcrumed on a fixed pin  $p$ . With the trigger  
20 in this position the upward movement of the lever C positively swings the rock arm F and moves the push lever H. The ledge  $c^2$  also projects sidewise so as to come in contact with the rock arm F and swing the latter slightly downward with each downward  
25 movement of the lever C, the effect of this being to slightly retract the push lever H, so as to free the stop  $h'$  of the locking arm from contact with the shoulder  $h^2$  so that the locking  
30 arm may be raised when it comes in contact with the cam  $a$  without danger of the pushing lever remaining raised with it.

The year wheel L is provided with four teeth  $l'$  and is mounted in the plate P close  
35 to the month wheel and directly below the end of the pushing lever H so that the toe  $h'$  of the latter may overhang it; and the periphery of the wheel except where extended at  $l$  is arranged to be level with the bottom  
40 of the February notch  $b^2$  of the month wheel while said extended portion  $l$  is adapted to extend above the bottom of the notch when in leap year position as indicated in Fig. 1. A pointer and leap year dial as shown in  
45 Fig. 7 are also provided.

The wheel E from which the calendar movement is derived makes one revolution every twenty four hours. The lever D' from which the operating rod D is suspended is pivoted  
50 at  $d^2$  and is raised by the pin  $e'$  on the wheel engaging the hooked arm  $d'$  of the lever. It is preferably counterbalanced and the downward movement is effected positively by the pin  $e'$  on the wheel coming in contact with  
55 the projection  $d$  of the lever.

The operation is as follows: To set the calendar merely turn the different pointers separately to the required month, day of the month, and year. As shown in Fig. 1 it is  
60 set for February 28 of a leap year and the push lever H, with the lock lever resting upon it, has dropped only upon the extension  $l$  of the year wheel instead of dropping to the bottom of the notch  $b^2$  as in an ordinary year.  
65 The cam  $a$  on the date wheel has been moved into contact with the heel  $k^2$  and the next upward movement of the lever C which

moves the date wheel to the 29th. will lift the rock arm K. The lever H is likely to be lifted with it owing to the pressure against  
70 the shoulder  $h^2$  but the downward movement of the lever C draws the lever H back momentarily so as to release it and cause it to drop under the stop  $h'$ . The spring I then presses the head  $g$  of the trigger G into the  
75 path of the lever C ready for the next upward movement of the latter. When this takes place on the night of the 29th. the rock arm F is positively raised with the lever C thus pushing the lever H into the position  
80 indicated in Fig. 2. This movement of the lever H has not only carried the month of the year wheel forward to March but by coming in contact with the projection  $a'$  on the date wheel has moved the latter the required  
85 distance to indicate the 1st of the month. The next downward movement of the rod D draws the lever H back to its normal position with the lock arm resting upon it and ready to operate in a similar manner upon the  
90 March notch of the month of the year wheel when the cam or incline  $a$  shall have again come around and released it, which will occur later owing to the higher position of the heel  $k^2$  with relation to the cam. In making  
95 the movement from December 31 to January 1 a projection  $b^3$  on the month wheel is arranged to come in contact with the teeth of the year wheel L and to turn the latter a quarter turn thus placing it automatically in  
100 proper position for the next February movement.

The radical difference between my machine and those heretofore devised consists in the arrangement of the indicator wheels so that  
105 each can be moved to indicate any desired figure on its own dial without changing the other. The day-of-the-month wheel can be turned any number of times without affecting the month-of-the-year wheel and vice  
110 versa; also the leap year wheel can be turned freely without moving the month-of-the-year wheel. Each dial is set without regard to the others, to the desired figures and then each is properly moved by the direct action of the  
115 clock.

It is obvious that the details and arrangement of the described construction may be greatly varied without departing from the spirit of my invention. I have for instance  
120 arranged the spring I so as to make it effect directly the movement of the pushing lever but prefer to make this movement positive as described. I do not therefore wish to limit myself to the particular construction shown;  
125 but

What I claim is—

1. In a calendar clock mechanism the combination with independently rotatable day of the month, month of the year, and leap year  
130 wheels, of mechanism substantially as described for automatically and jointly operating said wheels while permitting independent setting of the same, substantially as set forth.

2. In a calendar clock mechanism independently adjustable month of the year and day of the month wheels in combination with mechanism for moving said day of the month wheel every day and a push lever H and lock arm K arranged to co-operate with said mechanism in moving both of said wheels, substantially as set forth.

3. In a calendar clock mechanism independently adjustable leap year, month of the year, and day of the month wheels in combination with mechanism for moving said day of the month wheel every day and a push lever H and lock arm K arranged to co-operate with said mechanism in moving all of the said wheels substantially as set forth.

4. In a calendar clock mechanism the combination with the date wheel operating mechanism of the push lever H for the month of the year wheel and the rock arm F with trigger G arranged to engage the date wheel mechanism, substantially as set forth.

5. In a calendar clock mechanism independently adjustable month and day of the month wheel in combination with mechanism for moving said day of the month wheel each day, a push lever H, locking arm K engaging a shoulder on the pushing lever, rock arm F connected to the pushing lever, a spring I normally pressing said shoulder against the locking arm, and means for automatically releasing said pressure to permit the dropping of the push lever out of engagement with the locking arm, substantially as set forth.

6. In a calendar clock mechanism the combination with the month and day of the month wheels, a pushing lever H and locking arm K of an independently adjustable leap year wheel L having a leap-year projection  $l$  on its periphery arranged to control the action of said push lever substantially as set forth.

7. In a calendar clock mechanism the day of the month wheel with cam  $a$  and projection  $a'$ , the month of the year wheel with projection  $b^3$ , and the quartered leap year wheel with leap year extension, in combination with the push lever H having toe  $h'$ , shoulder  $h^2$ , and heel piece  $h^3$ , the locking arm K with stop  $k'$  and heel  $k^2$ , and mechanism for moving the day of the month wheel and push lever, all substantially as and for the purpose set forth.

8. In a calendar clock mechanism the combination with the rock arm F, push lever H and locking arm K of the day-of-the month wheel lever C having a projection engaging the rock arm, and connections between said day of the month wheel lever and the clock mechanism comprising a cam wheel E arranged to positively operate said lever and rock arm daily, substantially as set forth.

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

CHARLES W. FEISHTINGER.

Witnesses:

ED. A. KELLY,  
ADAM L. OTTERBEIN.