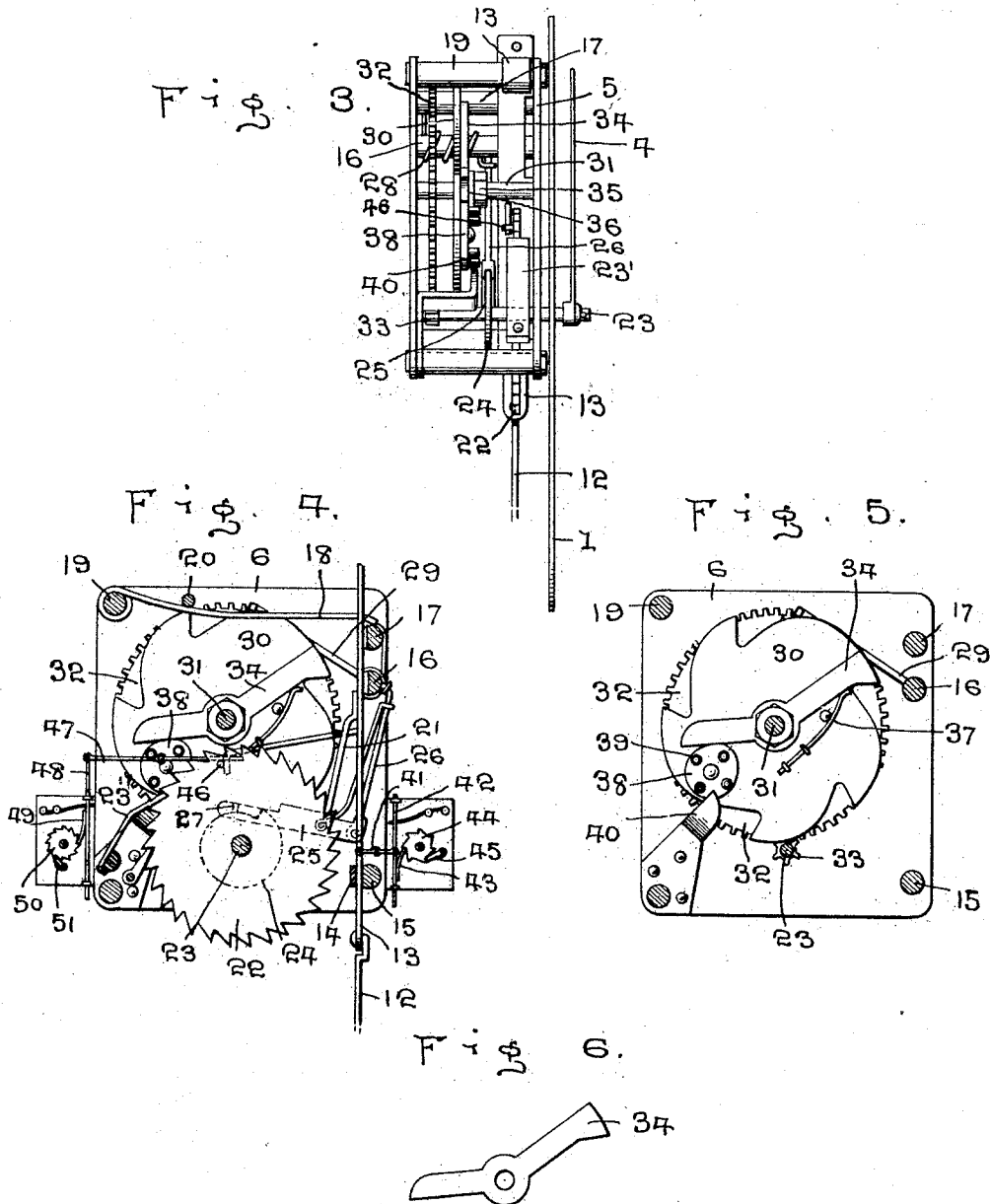


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CALENDAR.
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974,754.

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2 SHEETS-SHEET 2.



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DANIEL T. DAVIS, OF WORLEY, NORTH CAROLINA.

CALENDAR.

974,754.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DANIEL T. DAVIS, a citizen of the United States, residing at Worley, in the county of Madison and State of North Carolina, have invented certain new and useful Improvements in Calendars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in calendars and especially to the class which are automatically operated by the works of a clock having for an object to provide a device of this class which will show the months, days and date.

A further object is to provide a mechanism which will compensate for the long and short months and a still further object is to provide a means for compensating for leap year.

A still further object is to provide a mechanism which may be manually adjusted in case the clock should run down and it is desired to start the calendar at a certain date.

These and other objects will be hereinafter referred to and more particularly pointed out in the following specification and claims.

In the drawings forming a part of this application, Figure 1 is a detail elevation showing how the calendar is positioned to cooperate with a part of clock works or the like. Fig. 2 is a detail plan view of a peculiar wheel used in the calendar mechanism. Fig. 3 is an end elevation of the device with the means for registering the days of the week and the months removed. Fig. 4 is a front elevation of the calendar mechanism with the front plate removed. Fig. 5 is a front elevation in detail showing part of the calendar mechanism with certain portions removed, and, Fig. 6 is a detail plan view of a compensating lever used in connection with the calendar mechanism for providing for leap year. Fig. 7 is a detail perspective of the lever and arm which is adapted to cooperate with the single notched disk to compensate for long and short months.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1, 2 and 3 are dials showing respectively the date, the month and the day by means of

the usual form of indicators 4, while to the rear of these dials is positioned the operating mechanism inclosed between the plates 5 and 6, the plate 5 being the front plate and the plate 6 being the rear plate.

I have shown the calendar positioned above the clock works but with a re-arrangement, the same could be positioned below the clock works. A toothed pinion 7 located on the hour shaft 8, is designed to operate with a toothed disk 9, the number of teeth in the pinion 7 being such that they will cause the disk 9 to rotate once in twenty-four hours by meshing with the teeth of the latter, while a pin 10 is positioned on the face of the disk 9 so that it will raise a lever 11 fulcrumed at some convenient point on the works of the clock once in twenty-four hours and in turn raise a connecting rod 12 which is pivotally secured to a vertical extending bar 13. The bar 13 is slidably mounted adjacent the plate 5 and finds a bearing surface between the keeper 14 and the transverse extending pin 15, also against the transverse pins 16 and 17, while the upper end of the bar 13, is engaged by one end of a longitudinally extending spring 18, said spring being for the purpose of normally holding bar 13 in such position that the rod 12, when moved upwardly, will cause said bar 13 to direct a counter-acting pressure against said spring, the opposite end of the latter from the one that engages the bar 13 being in engagement with a transverse extending pin 19 and passing in its length under a lug 20 which provides a tension on said spring when the bar 13 is moved upwardly, and when the bar 13 moves downwardly to its normal position, a pawl 21 secured on the bar 13, causes the ratchet 22 to rotate for the distance of the space of one of the notches with which said pawl comes in contact. The number of notches on the ratchet 22 corresponds with the number of days in the longest month and said notches are also cut on a bevel in order to facilitate the cooperation with the pawl 21, while a spring pawl 23' is adapted to engage the notches on the ratchet 22 at a point diametrically opposite the lower end of the pawl 21 for the purpose of preventing the casual displacement of the ratchet 22 in case the mechanism is subjected to a jar. The ratchet 22 is mounted on the shaft 23 and mounted on said shaft a short distance below said ratchet is a single notched disk 24, said disk 24 being designed to cooperate

with an arm 25 carried by a lever 26. The arm 25 comprises two parallel bars spaced apart so as to receive the periphery of said disk 24 and a transverse pin 27 at the free
 5 end of said arm is adapted to engage the notch in said disk 24. The upper end of the lever 26 is secured in engagement with the pin 16, said pin being rotatably mounted in the plates 5 and 6, while a spring 28 encom-
 10 passes the pin 16 and has one end bent in engagement with the lever 26, while the other end thereof passes around the pin 17 and is secured in the plate 6 so that when the L shaped lever 29, which is also secured to the
 15 pin 16, is lifted by passing along the periphery of the five-notched wheel 30, a counter-acting pressure is exerted against the spring 28 and the pin 16 is rotated sufficiently to cause the lever 26 to raise the arm
 20 25 out of engagement with the disk 24 until the lever 29 passes from one notch downward into the next notch, at which instant pressure is released from the spring and the lug 27 comes in contact with the notched
 25 portion of the disk 24 and causes said disk to rotate sufficiently to insure the shaft 23 being turned to such a point as will cause the ratchet 22 to be rotated to indicate that a new month has started. It is to be under-
 30 stood that the arrangement of the notches on the wheel 30 are to be at predetermined distances apart and as the wheel 30 is rotated on the shaft 31 by means of the large gear wheel 32 being meshed in engagement
 35 with the pinion 33 mounted on the shaft 23, the lever 29 will pass along the periphery of the wheel 30 for the purpose previously mentioned. The gear wheel 32, as disclosed, contains seventy-two teeth, while the pinion
 40 33 has six teeth designed to mesh with the gear wheel teeth, thus providing a series of numbers which will count off the twelve months in the year. It is therefore obvious that a larger or smaller number of teeth
 45 might be shown on the pinion 33, it only being necessary that they shall mesh with a proportionate number of teeth on the gear wheel 32, which will when divided produce twelve.
 50 A dog 34 is mounted on the shaft 31 in front and directly against the wheel 30 and it is also held lightly against said wheel by means of a nut 35 and a washer 36, said dog 34 being adapted to rotate with the
 55 wheel 30, the outer portion of one end being designed to register with the outer periphery of the wheel 30 and a bent spring 37 secured on the face of the wheel 30 is so arranged as to hold said dog normally in
 60 alinement with the corresponding notch on the wheel 30 but a pivotally mounted elliptical disk 38 also located at a point on the wheel 30 adjacent the periphery thereof and having four upstanding lugs 39, is adapted
 65 to bear against the inner member of the dog

34 and cause a portion of the opposite end in registering with the periphery of the wheel 30 to move slightly beyond the notch and in so doing provides a slightly increased
 70 space over which the lever 29 must travel, the purpose being to compensate for the extra day in the month of February when it happens to be leap year. It is to be understood that the disk 38 is carried by the wheel
 75 30 and being of an elliptical shape, said disk must be so positioned on the wheel 30 to cause the dog 34 to compensate for leap year by having one of the lugs 39 adjacent the baffle 40 and the periphery of the disk 38
 80 34 to bear against the inner portion of the dog 34 to raise the same.

In order to register the days of the week, a connecting pin 41 is secured in the length of the bar 13 above and adjacent the keeper
 85 14, said pin extending horizontally outward beyond the plates 5 and 6 and it is connected to a spring operated lever 42, which has a cooperating pawl 43 which is designed to engage a notched disk 44 and to rotate said
 90 disk once in twenty-four hours as the bar 13 is moved by the works of the clock, while a second pawl 45 is for the purpose of holding the disk in normal position.

In order to register the months, a lug 46 is located on the inner face of the ratchet
 95 22 and as said ratchet rotates through the cycle of days comprising a month, the pin will be correspondingly carried and at the end of the month will come in contact with a pin 47, which in turn, is pivoted with a
 100 lever 48. By the contact of said pin 47 with the lug 46, a downward pressure will be exerted on the lever 48 which carries a pawl 49, said pawl adapted to engage the notched portions of a disk 50 and to rotate said disk
 105 the distance of one of the notches on the periphery thereof, in order to register a month and a second pawl 51 is designed to hold the notched disk in a normal position of rest.
 110

From the herein described device, it will be appreciated that I have provided a calendar suitable to be attached to clock works and the like and one which is so constructed
 115 as to account for the long and short months and also for leap year. The arrangement of parts is such that with a few changes, any clock works may be adjusted to cooperate with my calendar mechanism.

What I claim is:—

1. In combination, a bar adapted to cooperate with the works of a clock, a disk having a plurality of notches in its periphery
 120 corresponding with the extreme number of days in a month, said disk being mounted in operative relation to said bar, a means carried by said bar for the purpose of engaging
 125 said notches and rotating said disk upon a shaft, a disk having one notch in its periphery mounted to the rear of said first men-
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tioned disk and upon the same shaft and means coöperating with said last mentioned disk to compensate for the changes in long and short months.

5 2. A device of the character described, comprising the combination with a lever adapted to coöperate with the works of a clock; of a ratchet mounted on a shaft, means on said lever for rotating said
10 ratchet, a notched disk and gear wheel mounted on a shaft adjacent said other shaft, communicating means between said gear and ratchet-mounted shaft, a dog and an elliptical disk carried by said notched disk,
15 means stationarily mounted and adapted to engage said elliptical disk and rotate the same to compensate for leap year, means coöperating with said lever for registering the days of the week and additional means for
20 registering the months.

3. A device of the character described, comprising the combination with a lever adapted to coöperate with the works of a clock; of a ratchet mounted on a shaft,
25 means on said lever to rotate said ratchet, a single notched disk mounted on said shaft immediately below said ratchet, an additional lever carrying an arm coöperating with said disk to compensate for long and short months, an additional notched disk
30 and gear mounted on a shaft adjacent said other shaft, means on said last referred to disk to compensate for leap year and means coöperating with said first referred to lever
35 for registering the days of the week.

4. A device of the character described, comprising the combination with a lever adapted to coöperate with the works of a clock; of a ratchet mounted on a shaft,
40 means on said lever for rotating said ratchet, a single notched disk mounted on said shaft below said ratchet, a gear and a notched disk mounted on an additional shaft, said disk carrying a dog and a
45 smaller elliptical disk to compensate for leap year, a spring-held lever mounted on an additional shaft and carrying an arm spaced so as to receive said single notched disk therebetween and additional means to
50 register the days and the months.

5. A device of the character described, comprising the combination with a lever adapted to coöperate with the works of a clock; of a ratchet mounted on a shaft, a
55 single notched disk mounted on said shaft below said ratchet, an additional lever mounted on a second shaft and carrying an arm coöperating with said single notched disk to compensate for long and short
60 months, means coöperating with said first referred to lever for registering the days, means coöperating with said ratchet for registering the months and additional means to compensate for leap year.

65 6. In a device of the character described,

the combination with a ratchet mounted upon a shaft, a lever adapted to be operated by the works of a clock, means on said lever for rotating said ratchet and means to compensate for long and short months and leap
70 year; of means to register the days comprising an additional ratchet mounted on a shaft, an additional lever carrying means to rotate said additional ratchet and a pin pivoted in its center and engaging at its ends
75 said first and second referred to levers and means to register the months.

7. In a device of the character described, the combination with a ratchet mounted on a shaft, a lever adapted to be operated by
80 the works of a clock, means on said lever for rotating said ratchet and means to compensate for the long and short months and leap year; of means to register the months comprising an additional ratchet mounted on a
85 shaft, an additional lever carrying means to rotate said ratchet, a pin pivoted at its center and also pivoted at one end to said last referred to lever, a lug carried by said first referred to ratchet adapted to engage the
90 free ends of said pin in its rotation and means to register the days.

8. In a device of the character described, the combination with a lever adapted to coöperate with the works of a clock; of a pair
95 of parallel plates, a shaft mounted therebetween, a notched disk, a gear and a dog mounted on said shaft, a ratchet mounted on an additional shaft and adapted to be rotated by means carried on said lever, com-
100 municating means between said gear and ratchet-mounted shaft, said notched disk carrying a smaller elliptical disk engaging one end of said dog, means on one of said plates adapted to engage said elliptical disk
105 as said notched disk is rotated to compensate for leap year, and additional means to compensate for the long and short months.

9. In a device of the character described, the combination with a lever adapted to co-
110 operate with the works of a clock and a ratchet mounted on a shaft and adapted to be rotated by means carried on said lever; of a gear and notched disk mounted on an additional shaft, said gear having operative
115 engagement with said other shaft, a single notched disk carried by said first referred to shaft, a spring-encompassed pin having a lever depending therefrom, said lever being engaged by a strand of the spring and hav-
120 ing an arm pivoted to the outer end thereof, an additional lever extending upwardly from said pin and having engagement with said notched disk, said arm coöperating therewith and engaging said single notched
125 disk to compensate for long and short months, and additional means to compensate for leap year.

10. In a device of the character described, the combination with a ratchet mounted on
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a shaft, a lever adapted to rotate said ratchet
and a single notched disk mounted on the
shaft with said ratchet; of a gear and
notched disk mounted on an additional
5 shaft, said gear operatively engaging said
first referred to shaft, a spring-held lever
having an arm pivoted to one end thereof,
said arm being spaced apart to receive said
single notched disk, means engaging said
10 other notched disk and coöperating with
said arm to compensate for the long and

short months, means to compensate for leap
year, and additional means to register the
days and months.

In testimony whereof I have signed my 15
name to this specification in the presence of
two subscribing witnesses.

DANIEL T. DAVIS.

Witnesses:

JAMES SMART,
OSCAR HUNTER.