

April 5, 1932.

C. A. PARKER

1,851,982

CLOCK

Filed May 11, 1929

2 Sheets-Sheet 1

FIG. 1.

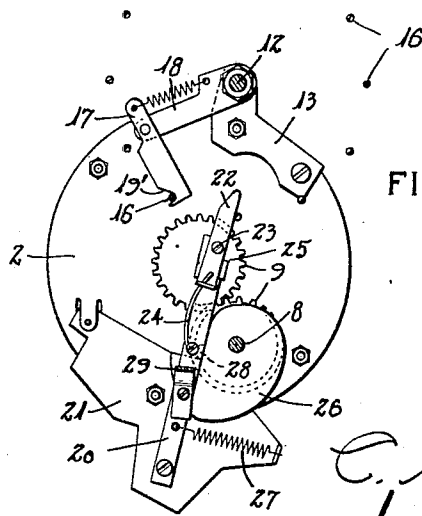
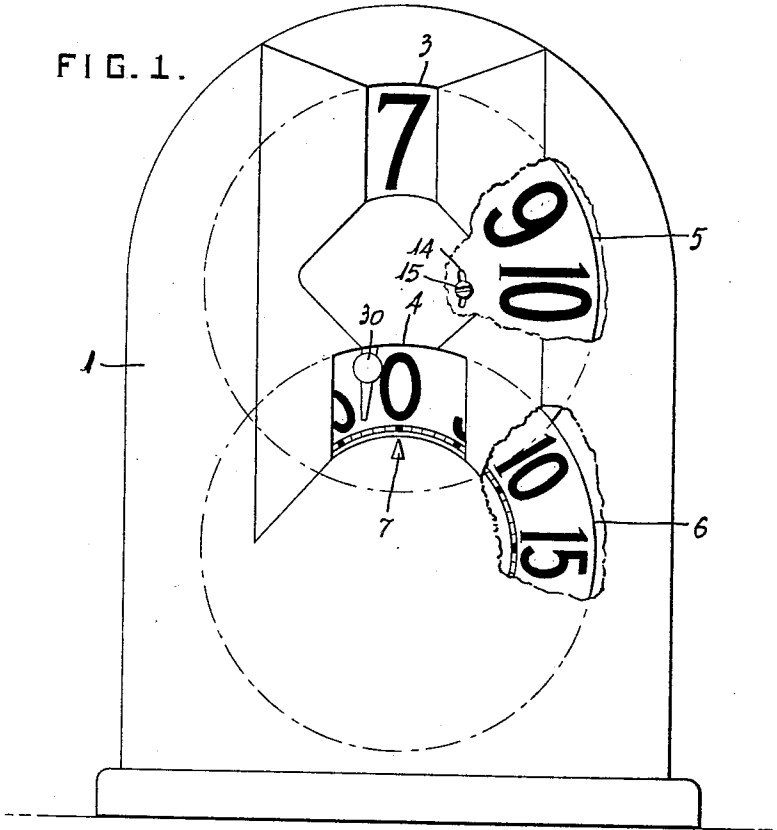


FIG. 4.

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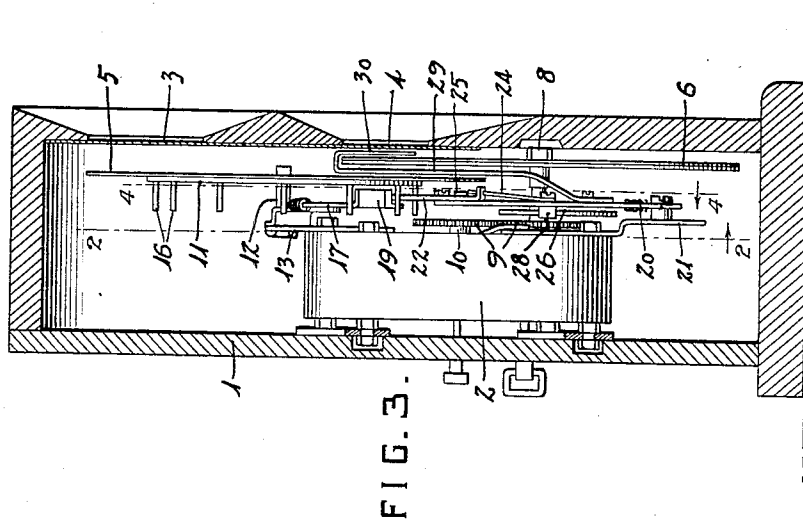


FIG. 3.

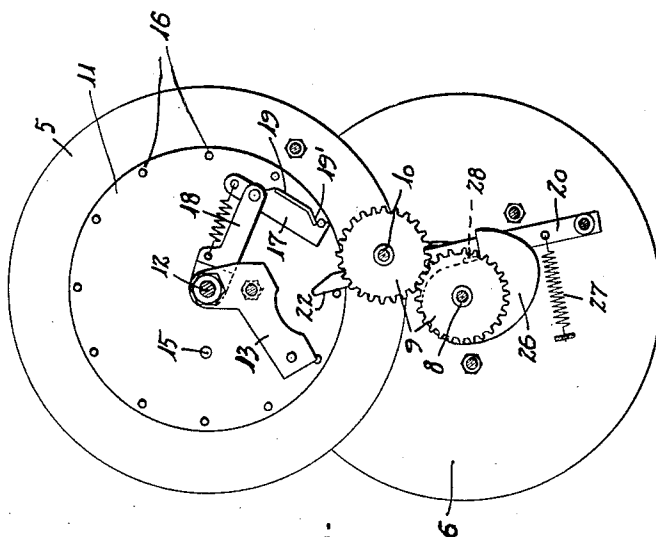


FIG. 2.

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## UNITED STATES PATENT OFFICE

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## CLOCK

Application filed May 11, 1929. Serial No. 362,250.

The present invention relates to clocks, and aims to provide a clock which, in lieu of the usual hands, has provisions for conveniently indicating the time by numerals exposed through windows of the case.

Another object of the invention is the provision of a clock having hour and minute dials with numerals thereon for indicating the time, and novel means for actuating said dials.

A further object is the provision of novel means for advancing the hour dial one step for each complete revolution of the minute dial, and for holding the hour dial against accidental movement.

Still another object is the provision of an indicator which will give a signal when the hour dial has been advanced, so as to assure of the correct reading of the hour immediately before and after the zero minute graduation registers with the index.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a front view of the improved clock, portions being broken away.

Fig. 2 is a section on the line 2—2 of Fig. 3.

Fig. 3 is a side elevation of the clock mechanism, with the case shown in vertical section.

Fig. 4 is a section on the line 4—4 of Fig. 3.

The case 1 may be of any suitable kind, and also the usual clock-works 2 housed therein. Said case has the windows 3 and 4 exposing the numerals on the faces of the hour and minute dials 5 and 6, respectively. The case has an index 7 to register with the minute graduations on the dial 6.

The hour dial 5 rotates counter clock-wise, and the minute dial 6 rotates similarly, and the time may be readily read from the numerals on the dials exposed through the windows, the index 7 designating the minutes of

the hour on the dial 6 while the hour is indicated in the window 3.

These windows may be in any suitable arrangement, although they are shown as spaced vertically. The dial 6 is secured on a shaft or spindle 8 mounted in the clock works 2 and connected by gear wheels 9 with the minute hand arbor 10, so that the dial 6 is rotated once each hour.

The dial 5 is disposed in front of a crown wheel disk 11 mounted for rotation on a spindle 12 secured to a bracket 13 which is fastened to the clock works 2. The dial 5 has an arcuate slot 14 receiving a clamping screw 15 threaded in the disk 11, to permit the dial 5 to be adjusted with reference to the disk 11 so that the numerals on the dial 5 will register accurately with the window 3.

The crown wheel disk 11 has twelve pins 16 projecting rearwardly therefrom, and a dog 17 is pivoted to a bracket 18 secured to the spindle 12 and bracket 13, and has a notch 19' to engage one of the pins 16 so as to prevent accidental turning movement of the dial 5. The dog 17 is spring influenced to engage the pin 16 which registers with the notch 19'.

A lever 20 is pivoted to a plate 21 secured to the clock works 2, and a finger 22 is pivoted, as at 23, to the free terminal of the lever 20 and is adapted to engage the pins 16 in succession. The finger 22 is yieldingly moved by a spring 24 on the lever 20 against a contact 25, so that the finger 22 may swing in one direction from normal position with reference to the lever 20.

The lever 20 is moved in one direction by a cam 26 on the shaft 8, and is moved in the opposite direction by a spring 27, said lever having a lug 28 to contact with said cam and which is released when the zero graduation of the dial 6 registers with the index 7, so that the spring 27 moves the lever 20 to the position shown in Figs. 2 and 4.

The dog 17 has a flange or portion 19 with which the finger 22 contacts when the lever 20 is swung by the spring 27, thereby moving the dog 17 to releasing position, and the finger 22 contacting with the pin from which the dog has been disengaged will turn the dial 5 one step. The finger 22 moving be-

yond the flange 19 will release said dog and the dog will then engage the next pin 16, as seen in Figs. 2 and 4, thereby preventing accidental rotation of the dial 5 and bringing the numeral thereof into proper registration with the window 3.

When the lever 20 is moved outwardly by the rotation of the cam 26, the finger 22 contacting with the pin 16 engaged by the dog 17 is swung downwardly so as to pass under said pin and flange 19, and when moved outwardly beyond them the finger 22 is swung back to normal position by the spring 24. This permits the finger 22 to pass outwardly without releasing the dog 17 or moving the dial 5 reversely.

When the minute dial 6 completes each revolution, the lug 28 is released from the cam 26 so that the spring 27 moves the lever 20 inwardly with a sharp movement. The finger 22 first releases the dog 17 from the corresponding pin 16, and then moves said pin to advance the dial 5 one step with a quick movement. During the next hour the cam 26 moves the lever 20 backwardly, thereby restoring the spring 27 for the next operation of the lever. The finger 22 may swing so as to move under the pin 16 and flange 19 during the return movement of the lever 20.

An arm 29 is secured to the lever 20 and has a reversely extending indicator 30 in front of the dial 6 and arranged to move behind the window 4 when the lever 20 is swung inwardly to advance the dial 5. This provides a signal in order that the observer may know whether the hour indicated in the window 3 is correct, immediately before and after the zero graduation of the minute dial 6 passes the index 7. Thus, when the indicator 30 is exposed through the window 4 this signals that the hour dial has been advanced. Thus, looking at Fig. 1 the correct time would be 7:00 o'clock, whereas if the indicator 30 is not exhibited in the window 4 the correct time would be 7:59+ o'clock, and when the indicator 30 is moved behind the window the dial 5 would move to bring the 8 behind the window 3.

Having thus described the invention, what is claimed as new is:

1. A clock comprising a case having two windows, a minute dial in the case exposed through one window, an hour dial within the case exposed through the other window, clock works operably connected with the minute dial for rotating same, a crown wheel rotatable with the hour dial, a spring actuated lever cooperable with the crown wheel for advancing the hour dial step by step, a cam rotatable with the minute dial for returning said lever, and an indicator movable with said lever behind one of said openings for signalling when the hour dial has been advanced.

2. A clock comprising a case having two

windows, a minute dial in the case exposed through one window, an hour dial within the case exposed through the other window, clock works operably connected with the minute dial for rotating same, a crown wheel rotatable with the hour dial and having a plurality of pins projecting rearwardly therefrom, a dog selectively engageable with said pins to prevent overthrow of said wheel, a spring influenced lever having a finger yieldable in one direction to pass said dog during the return movement of the lever, said finger being arranged to move said dog out of engagement with the pins and to selectively engage one of the pins to advance the wheel one step in the spring-actuated movement of the lever, and a cam rotatable with the minute dial for returning said lever.

In testimony whereof I hereunto affix my signature.

CHARLES ALMER PARKER.