

(No Model.)

G. REISS.
TIMEPIECE DIAL.

No. 483,696.

Patented Oct. 4, 1892.

Fig. 1.

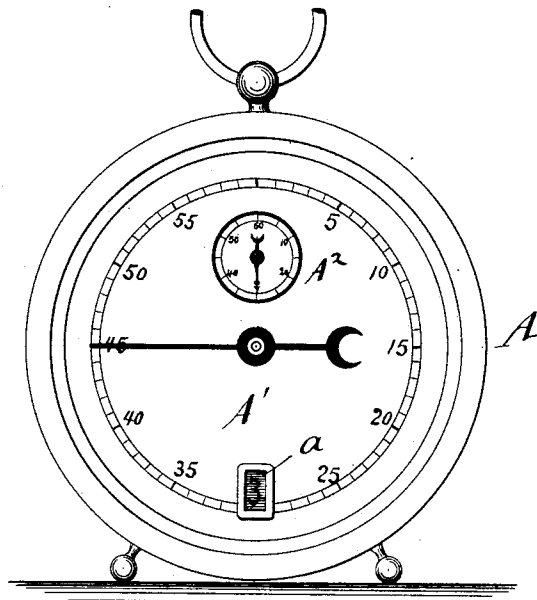


Fig. 2.

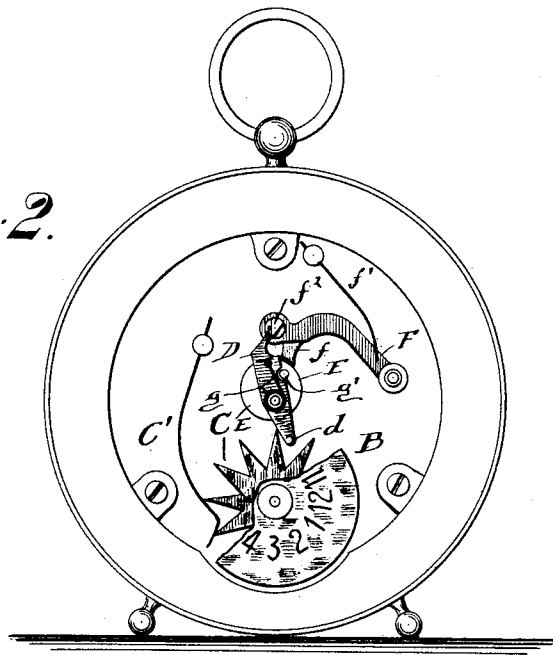
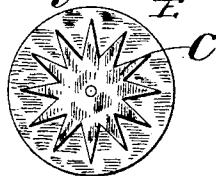


Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE REISS, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO
AUGUST J. GLEISSNER, OF SAME PLACE.

TIMEPIECE-DIAL.

SPECIFICATION forming part of Letters Patent No. 483,696, dated October 4, 1892.

Application filed February 18, 1892. Serial No. 422,049. (No model.)

To all whom it may concern:

Be it known that I, GEORGE REISS, a citizen of the German Empire, and a resident of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Watches and Clocks, of which the following is a specification.

This invention has reference to certain improvements in watches and clocks of that class which are provided with intermittently-movable figures that are arranged at the outer disk, so as to indicate the full hour by means of numbers, while the minutes and seconds are indicated by hands in the usual manner, said improvements being designed with a view of simplifying the construction of this class of timepieces without increasing the expense of the same over the expense connected with the present transmitting gear-wheels from the hour to the minute arbor.

The invention consists of a watch or clock in which the full hours are indicated by means of figures arranged on an intermittently-movable hour-disk, which is actuated by a star-wheel, one tooth of which is engaged every hour by a pawl that is applied to the minute-arbor. An eccentric is applied to the minute-arbor and adapted to actuate a lever that carries a tapering pallet, which permits the passing of the star-wheel-actuating arm when the lever is lifted to its greatest extent by the eccentric, so that the turning of the hour-disk takes place. The pin-arm is placed loosely on the minute-arbor and acted upon by a spring, so as to be held against a fixed pin of the eccentric, so that the pawl-supporting arm can be retained when forming contact with the pallet until the pallet-carrying lever is raised sufficiently to permit the passage of the pawl and the moving of the hour-disk.

In the accompanying drawings, Figure 1 represents a front elevation of a clock made according to my improvement. Fig. 2 is a front elevation of the same, the hand and dials being removed and showing the actuating mechanism for the hour-disk, parts being broken out. Fig. 3 is a detail rear elevation of the hour-disk.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a clock or other timepiece, which is provided with a large minute-dial A' and seconds-dial A² within the same. Preferably at the point diametrically opposite to the seconds-dial is arranged an opening *a* in the dial A', back of which the hour-disk B is arranged, on which the figures "1" to "12" are arranged concentric to the arbor of the disk. To the arbor of the hour-disk B and at the rear of the same is applied a star-wheel C, having twelve teeth or spurs, which are engaged by a pin *d* on one end of an arm D, that is placed loosely on the arbor of the minute-hand. A spring check-pawl C' also engages the teeth of the star-wheel, so as to prevent the same from turning until the required pressure is exerted on the same. To the arbor of the minute-hand is applied back of the arm D an eccentric E, which is rigidly attached to said arbor, said eccentric serving for the purpose of oscillating the pivoted lever F, that is pivoted at its outer end to the supporting-plate of the movement, said lever being provided with a lug *f*, that rides on the circumference of the eccentric E, said lug being kept in contact with the eccentric by the spring *f'*, that bears against the lever F. In addition to the arm *f* the lever F is provided with a projecting tapering pallet F², which serves to engage that end of the arm D which is diametrically opposite to the pin *d*, so as to arrest the same when it abuts against the pallet by moving with the eccentric or with the arbor of the minute-hand. A spring *g*, that is applied to the arbor of the arm D, presses the arm against the pin *g'* on the eccentric E, so that the arm moves around with the eccentric and the arbor of the minute-hand until the end of the arm D abuts against the pallet *f*² and is stopped by the same. It is thereby moved against the tension of its spring away from the pin until the eccentric E exerts its greatest eccentricity on the lug *f* of the lever F and lifts thereby the pallet *f*² above the end of the arm D, so that by the action of its spring the same is permitted to pass quickly beyond the pallet and move thereby by its pin *d* the star-wheel of the hour-disk for the distance of one tooth. At the same time the hour-disk is shifted and the next consecutive

number on the same placed into the opening a' of the dial. The arbor of the minute-hand, the eccentric, and the arm D make one full rotation during the next hour until the minute-hand arrives at the zero-point of the dial, at which point the arm D is released by the pallet, and inasmuch as it exerts by its greatest eccentricity the highest lifting action on the lever F the pin d is permitted to pass the pallet and actuate the star-wheel of the hour-disk in the same manner as before described. In this manner the hour-disk is shifted every hour, and thereby by means of a simple and inexpensive mechanism are the hours indicated by means of figures.

The attachment described has the great advantage that the same can be readily turned in either direction for setting the minute hand without interfering with the proper indication of the hour-disk. This can be readily done, as the arm D causes the lifting of the lever F whenever the arbor of the minute-hand is turned in the direction opposite to its regular direction of motion. The hour-disk is simultaneously moved in opposite direction, so that the clock or timepiece can be set forward or backward, as required, without confusion or injury to the movement. This attachment is also adapted to watches and other timepieces to facilitate the reading of the time, whether applied to watches or clocks.

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

1. The combination, with a timepiece having an opening in its dial, of an hour-disk having figures arranged on the same that are shown successively through said opening, a

star-wheel applied to the arbor of the hour-disk, an arm applied loosely to the arbor of the minute-hand and provided with a pin at one end that engages the said star-wheel, a fixed eccentric on the minute-arbor, a pivoted lever that is provided with a lug to ride on the eccentric and with a pallet that engages the end of the arm opposite to that of the pin, and a spring interposed between the minute-arbor and the arm on the same, said spring holding said arm in contact with a fixed pin on the eccentric, substantially as set forth.

2. The combination, in a timepiece, of a dial provided with an opening for exhibiting the figures indicating the full hour, an intermittently-shiftable hour-disk arranged back of the dial, a star-wheel attached to said hour-disk, an eccentric keyed to the minute-arbor and provided with a fixed pin, a spring-actuated arm placed loosely on the minute-arbor and provided with a pin at one end for engaging the teeth of the star-wheel, and a pivoted and a spring-actuated lever-arm provided with a lug that rides on the eccentric and with a pallet for engaging the end of the pin-carrying arm, so as to retard the same until the eccentric produces the full lifting of the lever and permits the passing of the spring-actuated arm and the actuating of the star-wheel and hour-disk, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GEORGE REISS.

Witnesses:

PAUL GOEPEL,
CHARLES SCHROEDER.