

No. 651,832.

Patented June 19, 1900.

C. E. DAVIS.
GEOGRAPHICAL DIAL.

(Application filed Apr. 13, 1899.)

(No Model.)

Fig. 1.

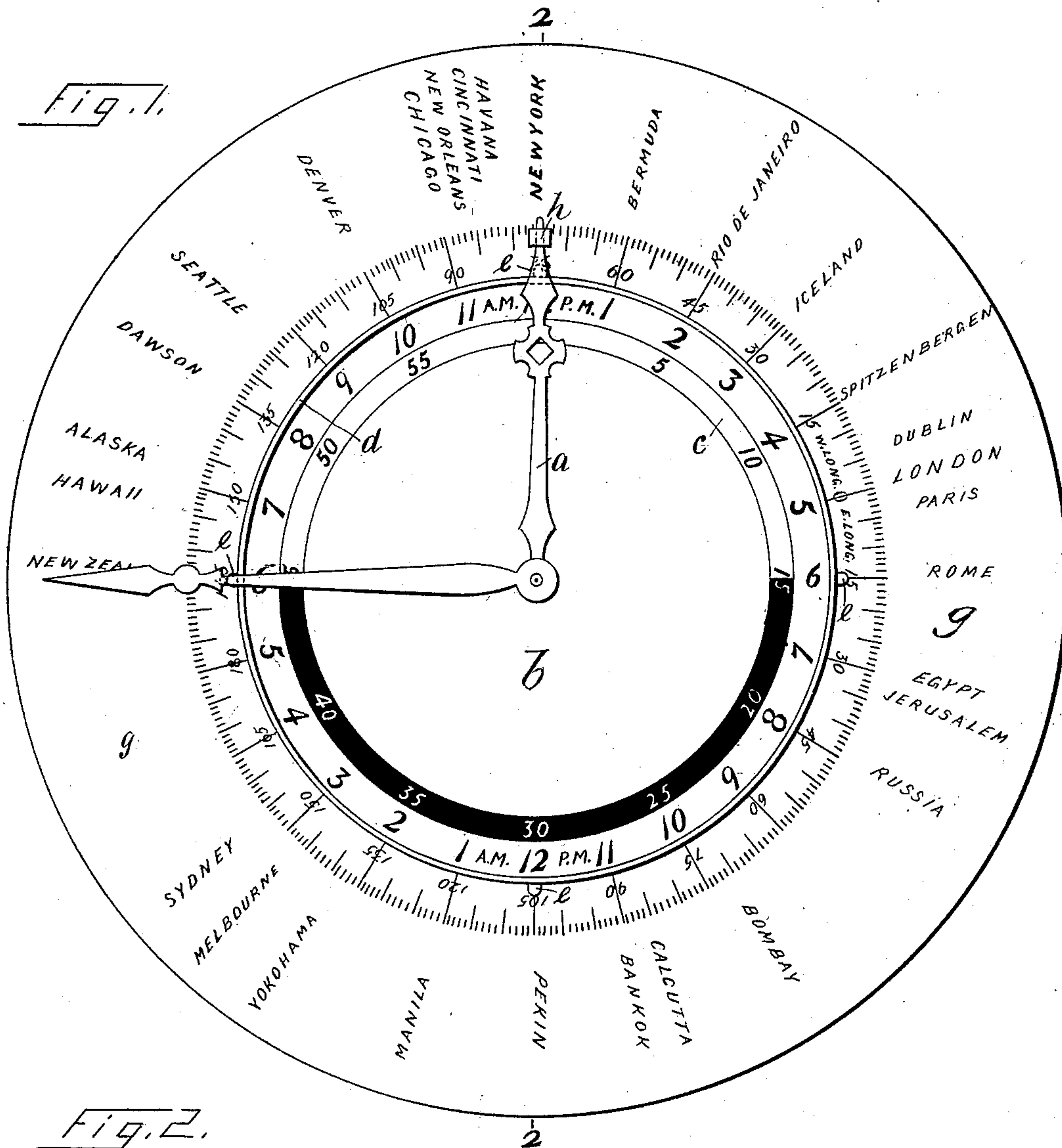
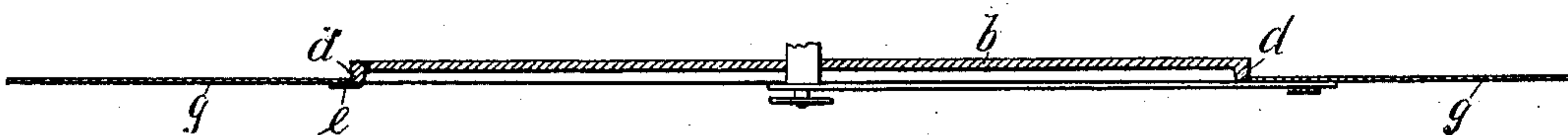


Fig. 2.



WITNESSES:

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CHARLES E. DAVIS, OF NEW YORK, N. Y., ASSIGNOR OF FIVE-SIXTHS TO WILLIAM C. EGERTON, OF SAME PLACE, AND WILLIAM S. BAKER, OF JERSEY CITY, NEW JERSEY.

GEOGRAPHICAL DIAL.

SPECIFICATION forming part of Letters Patent No. 651,832, dated June 19, 1900.

Application filed April 13, 1899. Serial No. 712,852. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. DAVIS, a citizen of the United States, and a resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Time-Indicators, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to an improvement in time-indicators; and it has for its object the production of a simple inexpensive dial to be substituted for the usual dial in the ordinary twenty-four-hour timekeeping instrument, whereby the time in various parts of the world at any particular moment may be indicated.

The invention consists of a circular dial upon which are marked the degrees of longitude and the names of any desired number of cities or countries, each placed opposite its meridian, indicated by the degrees of longitude marked upon the circle. This circular dial is carried by and revolves with the hour-hand of an astronomical or ordinary twenty-four-hour timekeeping clock-movement.

A further feature of the device consists in the employment of a shaded portion of the fixed time-dial used in conjunction with the clock-movement, so that all those places marked upon the revolving dial radially beyond said shaded portion will be clearly shown to be in darkness.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, Figure 1 is a face view of the dial in position upon a clock-face, and Fig. 2 is a sectional view on the line 2 2 of Fig. 1.

In the application of my device I employ an ordinary or astronomical movement in which the hour-hand *a* makes one complete revolution in twenty-four hours.

The fixed dial of the clock *b* is provided with a series of figures upon its outer periphery representing the hours in consecutive numbers from noon to midnight and from

midnight to noon. An inner concentric circle *c* is divided into sixty units, representing the minutes of an hour. In the drawings each of these units is not shown, the figures being placed only at intervals of five minutes. An annular rib *d* projects outwardly from the face of the fixed dial at its outer periphery, and this rib carries a series of lugs *e e*, spaced at suitable intervals. The outer dial *g* is loosely mounted upon the outer periphery of the rib *d* and is prevented from becoming displaced by the lugs *e e*. This dial is detachably connected with the hour-hand *a* by means of any suitable pocket or clamp *h*. By providing the fixed dial with the rib and the lugs the outer dial is in the same plane with the hour-hand *a*, so that the hand can be inserted or removed from the pocket or clamp at any time, as for repairs to the clock or in providing the usual clock with one of my improved dials. The hour-hand is longer than the diameter of the fixed dial, so as to extend across a portion of the face of the outer dial and fit within the pocket *h*. By means of the lugs upon the rib the outer dial is kept from falling forward off the inner dial, and the frame of the works to the rear of the dial prevents its falling backward, thereby securing the outer dial in position without the use of extra means other than the lugs. At the inner periphery of this revolving dial the degrees of longitude east and west from the meridian of Greenwich or any other predetermined prime meridian are marked. All the places at which it is desired to show the time at any particular moment are marked upon the revolving dial radially outside of and opposite to its corresponding meridian. The hour-hand is fixed to this dial at the degree of longitude representing the meridian upon which the clock is used, in this case the position being that of New York; but it is obvious that the hour-hand may be fastened to the revolving dial at any other desired point, in which case the time will be indicated at all other points at the same time as indicated by the fixed dial at that point. It is obvious that as the hour-hand makes one complete revolution once in twenty-four hours and that the relative positions of the

various places marked upon the dial never vary the dial will revolve at the same relative speed as the earth and that the time at each and all of the various places marked
 5 upon the dial will be clearly shown at any moment at the home station. As, for instance, if it is twelve o'clock at New York it will be two o'clock at Rio de Janeiro at forty-five west longitude, three o'clock in Iceland at
 10 thirty degrees west, four o'clock at Spitzbergen at fifteen west, and five o'clock in London on the prime meridian, all in the afternoon and in daylight, while at the same time it is midnight in Pekin, one a. m. in
 15 Manila, &c., as indicated by the shaded portion of the fixed dial.

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

20 1. In an improved dial for clocks, the combination with an inner dial, of an outer dial, the periphery of the inner dial being provided with a rib and a series of lugs, the surface of said dial within said rib being pro-
 25 vided with two circular rows of figures, one of which comprises a duplicate arrangement of the numerals from "1" to "12," respectively to indicate the hours, and the other one consists of an arrangement of the figures
 30 from "10" to "60" to indicate the minutes, one of said rows of figures being shaded to

indicate darkness; and the outer dial fitting around said rib behind the lugs, and provided with a series of names and characters to indicate places and degrees of longitude, and
 35 with a pocket in a radial line with one of the names.

2. The combination of two dials, one of which is of less diameter than the length of the hour-hand of the clock, and has its
 40 periphery provided with a rib and a series of lugs, and its surface adjacent to the rib provided with characters to indicate the hours and minutes, a portion of said surface being shaded to indicate darkness, and the outer
 45 dial being provided with characters to indicate names of localities and degrees of longitude, and, with a pocket for the reception of the outer end of the hour-hand of the clock, said outer dial lying between the lugs and
 50 the frame of the clock and in substantially the same plane with the hour-hand of the clock.

In testimony that I claim the foregoing as my invention I have signed my name, in
 55 presence of two witnesses, this 10th day of April, 1899.

CHARLES E. DAVIS.

Witnesses:

SYDNEY I. PRESCOTT,
 B. McCOMB.