

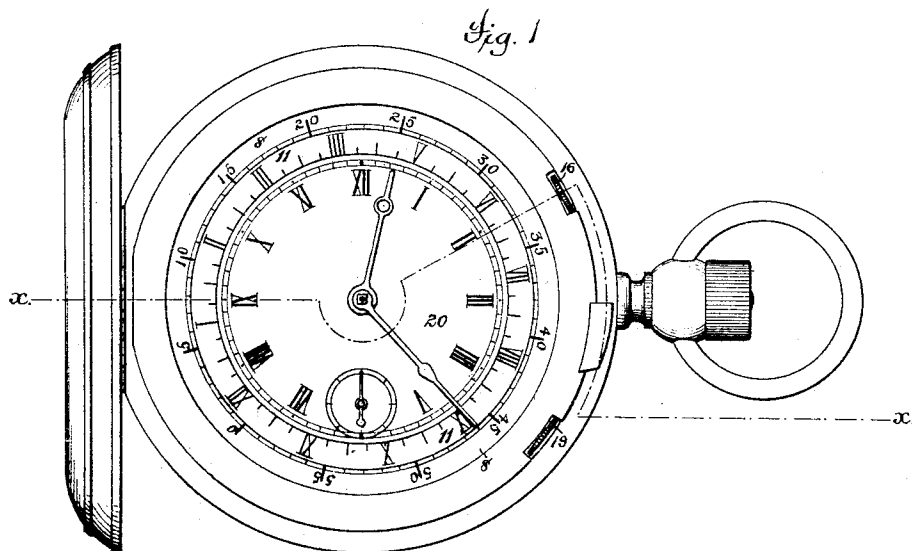
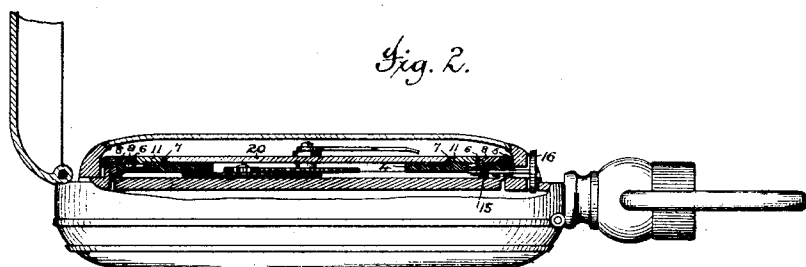
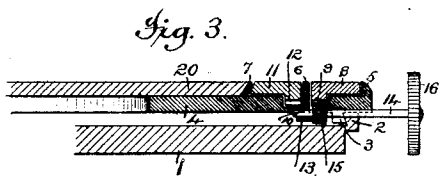
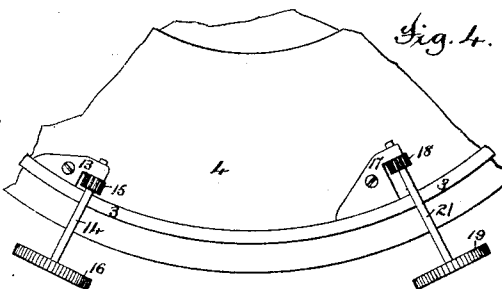
(No Model.)

2 Sheets—Sheet 1.

J. J. D. TRENOR.
DIAL FOR WATCHES AND CLOCKS.

No. 262,513.

Patented Aug. 8, 1882.



Attest;
Geo. A. Graham
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Inventor,
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by Munson Philipp
Att'ys.

(No Model.)

2 Sheets—Sheet 2.

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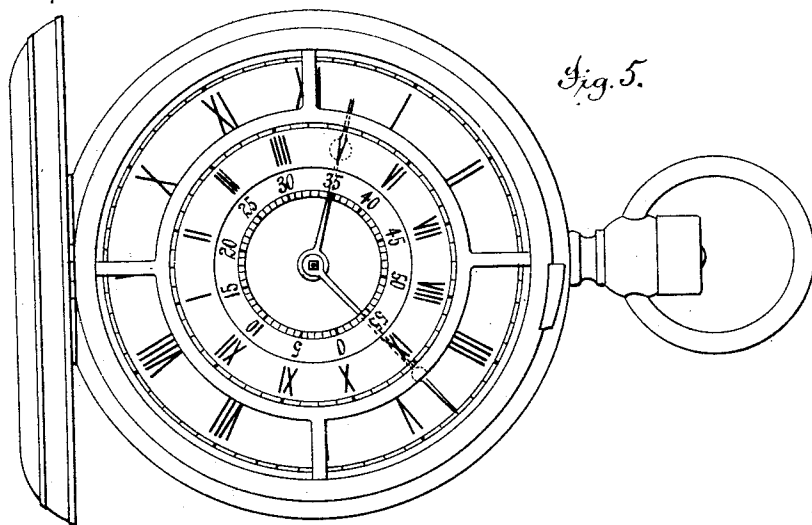


Fig. 5.

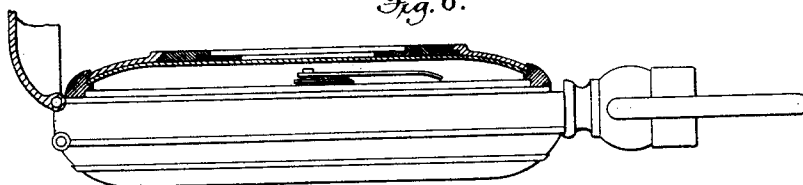


Fig. 6.

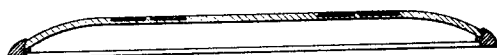


Fig. 7.

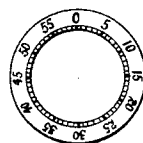
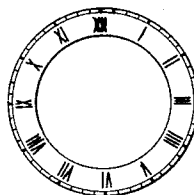


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN J. D. TRENOR, OF NEW YORK, N. Y.

DIAL FOR WATCHES AND CLOCKS.

SPECIFICATION forming part of Letters Patent No. 262,513, dated August 8, 1882.

Application filed May 9, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. D. TRENOR, a subject of the Queen of England, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Time-Pieces, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of my invention is to provide time-pieces with means whereby the ordinary hands thereof, without being moved independently of the motion imparted to them by the ordinary time-movement, may indicate the time at any two localities at once.

My invention consists in the employment, with a time-piece having an ordinary fixed dial and minute and hour hands, of two supplemental independently-adjustable dials, one having in its face minute-divisions and the other having on its face hour-divisions and fractions of hours, said supplemental dials being arranged so that they and the ordinary hands and the ordinary fixed dial can be seen and inspected simultaneously, and said supplemental dials being set with reference to the ordinary hands without moving such hands independently of the movement imparted to them by the ordinary time-piece movement to indicate the time at any place where it differs from that in the place where the hands with reference to the ordinary fixed dial indicate the time.

My invention further consists in details of construction, hereinafter fully described and claimed.

In the drawings I have shown one form of apparatus, which is the best I have devised in carrying out my invention, Figure 1 thereof being a plan view of a hunting-case watch, with the lid open, containing my invention, Fig. 2 being a vertical longitudinal section of a portion of the same, taken in the line *xx* of Fig. 1. Fig. 3 is an enlarged partial section of the same, and Fig. 4 is a bottom view of a section of the plate 4. Figs. 5, 6, 7, and 8 are views of modifications of the apparatus shown in the other figures containing my invention.

1 is the upper of the two plates between which the watch-movement is placed. It is provided with a bezel, 2, into which a flange,

3, on a metal plate, 4, is sprung, and by which the plate 4 is held. This plate is provided with flanges 5, 6, and 7. Between the flanges 5 and 6, and resting upon this plate, is a supplemental independently-adjustable annular dial, 8, having sixty divisions, indicating minutes, on its face. It is provided with a circular rack, 9, rigidly connected thereto, for which a groove, 10, in the plate 4, is made, to permit of its movement. Between the flanges 6 and 7 is a second supplemental independently-adjustable annular dial, 11, divided on its face into hours and preferably quarters of hours. This dial is also provided with a circular rack, 12, which also projects into a groove cut in the plate 4, to permit it to move.

Journalled partly in the flange 3 and partly in the bezel 2 at one end, and in a small box, 13, at the other end, is a shaft, 14, having upon its inner end a pinion, 15, gearing with the circular rack 9, and at its outer end with a milled wheel, 16, by means of which the dial 8 may be turned in either direction by removing the finger or thumb over said wheel; also, journalled partly in the flange 3 and partly in the bezel 2 at one end, and in a box, 17, at the other end, is a shaft, 21, provided with a pinion, 18, gearing into the rack 12, and at its outer end provided with a milled wheel, 19, whereby the dial 11 may be turned in either direction by running the finger or thumb over the milled wheel 19. Apertures in the rim holding the crystal are made to permit the shafts 14 21 to pass. After the dials 8 and 11 are placed between the respective flanges 5 and 6 and 6 and 7 the flanges 5 and 7 are burnished over the slightly-beveled edge of each of said dials to prevent them from moving out from between said flanges. Within the flange 7 is placed the ordinary fixed dial 20, which is held in place by studs passing through the plate 4, and pins passing through holes in said studs in the ordinary manner, and through this dial 20 passes from the ordinary watch-movement the shafts that carry the ordinary minute and hour hands, the minute-hand being preferably extended, so as to project over the dial 11 and to the dial 8, and the hour-hand to said dial. Over the hands and dials is placed the ordinary crystal, fitting in the ordinary rim used for holding it.

In using my invention as embodied in this particular form of apparatus, the watch being set, for instance, to New York time, whether fast or slow, if it be desired to use said watch temporarily in London, the user would only have to turn the annular dial 11 by means of the milled wheel 19 until the proper division or fraction of a division on said dial was opposite the hour-hand to indicate London time, and to turn the dial 8 by the milled wheel 16 until one of its divisions or a fraction thereof coincided with the proper minute division of London time when opposite the minute-hand, thus enabling the watch to be set to correct London time without moving the hands, and without regard to whether the watch is either fast or slow New York time. The watch would thus indicate the correct time in London. It is only necessary to move the dials 8 and 11 so that the proper hour or fraction of an hour and minute or fraction of a minute division are opposite the hour and minute hands at any place where there is a difference of time between such place and the place where the watch is ordinarily used, the hands indicating on the ordinary dial the time in the latter place to enable the time to be ascertained without calculation at such different place after this simple adjustment has been made.

I do not confine my invention to the specific structure just described with reference to the drawings, as it may be varied within wide limits. Thus the two supplemental independently-adjustable dials may be placed in a rim provided with arms extending over the crystal of the watch and held by the bezel that holds said crystal, so that the faces of said adjustable dials and the ordinary hands and the ordinary fixed dial can be seen and inspected simultaneously, as shown in plan view at Fig. 5 and sectional view at Fig. 6; or they may be arranged under the crystal but above the hands, a sufficient space being left to permit said hands to move freely; or they may be arranged to work in grooves cast in the crystal of the watch and spring into them, and so that their faces and the hands, and the ordinary fixed dial can be seen and inspected simultaneously, as clearly shown at Fig. 7 of the drawings. In all of these cases the two supplemental independently-adjustable dials may be adjusted by the fingers, and they may be of any desired material—as metal, paper, pasteboard, &c.—or they may be made of paper or pasteboard, of such size as to be within the ordinary hour-circle of the fixed dial with which they are to be used, and after having been properly adjusted with reference to the ordinary hands, temporarily pasted or glued or otherwise secured to either the inside or outside of the crystal, so that the hands and their faces and the ordinary fixed dial can be seen and inspected simultaneously, and be removed and others adjusted when moving from place to place. Such paper dials are shown in plan and sectional views at Fig. 8 of the drawings. In all of these cases the outer supplemental dial can

have the hour divisions on its face and the inner one the minute. These supplemental dials can also be arranged so that they are within the divisions of the ordinary fixed dial. These supplemental dials may also be applied either in the manner shown in the drawings or as above suggested to ships' chronometers, portable clocks, or other movable time-pieces and fixed time-pieces, as well as to watches, and any skilled mechanic could attach them in the manner above described or in various other ways, and such time-piece would still contain my invention so long as the ordinary dial and hands were used in connection with two supplemental dials capable of independent adjustment with reference to the ordinary hands, so that their faces and the hands can be seen simultaneously, for the purpose described. These supplemental dials can be applied to old time-pieces as well as new, so as to effect the object above described.

By the use of my invention the time can be ascertained at any two localities at once without moving the hands of the time-piece independently of the motion imparted to them by the time-movement, and thus without liability of the time-piece losing its rating, and a traveler can, after adjusting the two supplemental dials upon his time-piece, ascertain the local time at any place he has reached. A ship-master can also do the same when he is at anchor at any port, and this without the inconvenience of and injury incident to resetting it to indicate the time at the locality where it is ordinarily used.

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

1. In combination with the ordinary fixed dial and hands of a time-piece, two supplemental independently-adjustable dials, one having on its face the divisions of minutes and the other of hours, substantially as and for the purpose described.

2. In combination with the ordinary fixed dial and hands of a time-piece, two supplemental independently-adjustable dials, one bearing on its face the divisions of minutes and the other of hours, with means for adjusting the same with reference to said hands, without moving the latter, substantially as described.

3. In combination with the plate 4, the supplemental independently-adjustable dials 8 and 11, substantially as described.

4. In combination with the plate 4, the supplemental independently-adjustable dials 8 and 11, provided with annular racks and shafts provided with pinions and wheels, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN J. D. TRENOR.

Witnesses:

T. H. PALMER,
M. B. PHILIPP.