

S. E. G. Ransom,

25 Sheets, Sheet 1.

Geographical Clock.

N^o 61,459.

Patented Jan. 22, 1867.

Fig 2.

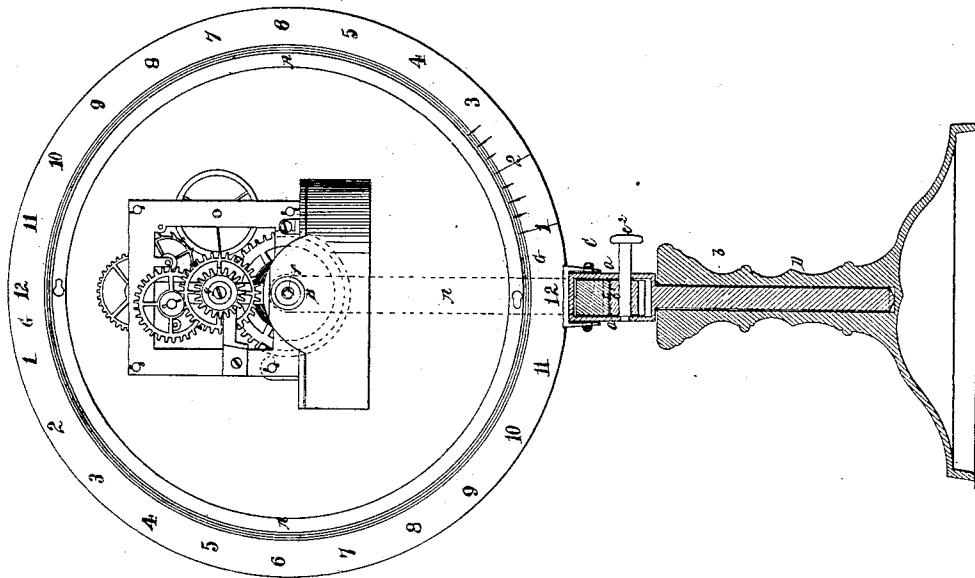
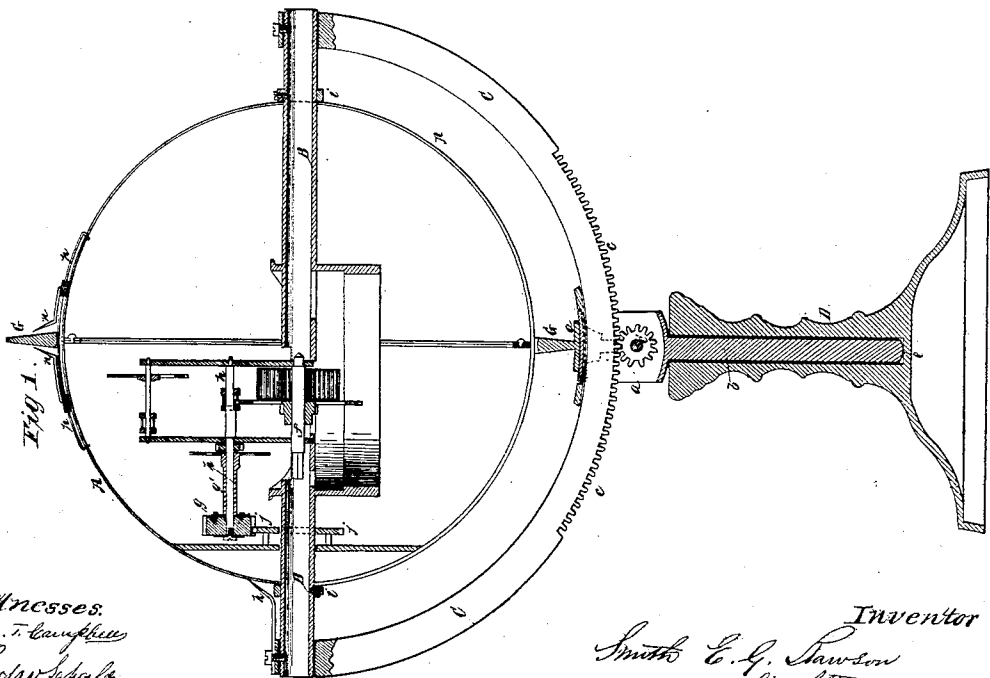


Fig 1.



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by his Attys
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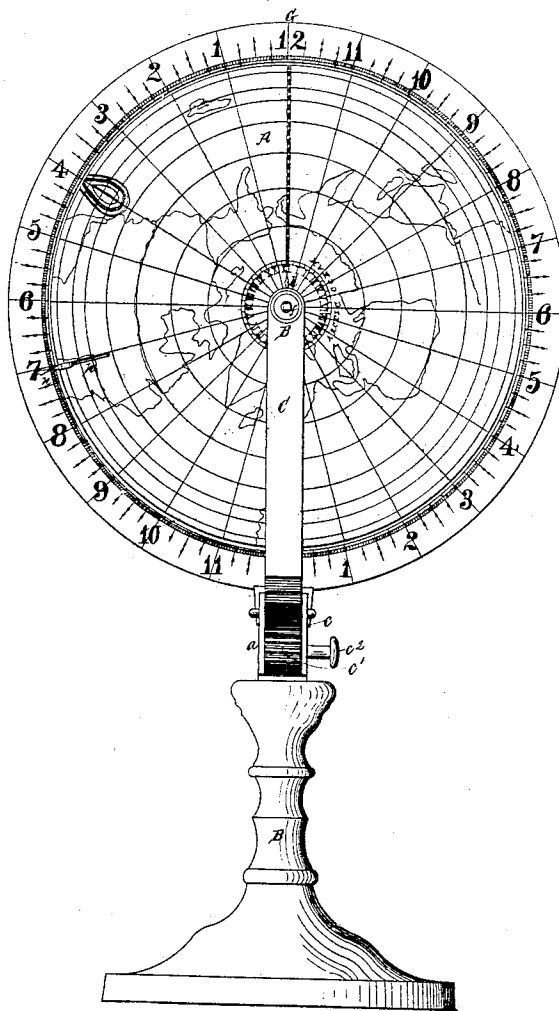
S. E. G. Ramson,

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Fig 3.



Witnesses.

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SMITH E. G. RAWSON, OF SARATOGA SPRINGS, NEW YORK.

Letters Patent No. 61,459, dated January 22, 1867.

IMPROVEMENT IN GLOBE CLOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SMITH E. G. RAWSON, of Saratoga Springs, in the county of Saratoga, and State of New York, have invented a new and improved Globe Clock; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, sheet 1, is a diametrical section through the globe clock, taken in a vertical plane through the axis of the globe.

Figure 2, sheet 1, is a vertical section taken in a plane through the globe and its supports at right angles to the plane of the section of fig. 1.

Figure 3, sheet 2, is a front elevation of the improved globe clock complete.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a globe time-piece for giving the difference of time in places of different degrees of longitude, or the difference of time between any place on the globe and the place where the clock is used, said globe being so constructed that the mechanism for moving it one revolution in twenty-four hours is contained within it, out of sight and out of the way, thus leaving nothing exposed outside of the globe but the dial-plate and pointers and the pedestal support for the instrument, as will be hereinafter described.

Hitherto globe clocks have been constructed for indicating the time when the sun culminates for any place on the globe, and also the difference of time between different localities, but in such time-pieces the mechanism for moving the globes is located outside thereof, and the globes are thus rendered unwieldy and cannot be adjusted and used as ordinary globes for instruction.

To enable others skilled in the art to understand my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, A represents a terrestrial globe, which is constructed hollow for the purpose of receiving the clock mechanism. This globe A is mounted upon a hollow shaft, B, which passes through it and projects from its poles a suitable distance to enter bearings which are formed on the upper extremities of a semicircular support, C, which may be concentric to the centre of the globe, as shown in fig. 1, sheet 1. This semicircular support is passed through a box, *a*, formed on the upper end of a vertical spindle, *b*, and by means of the rack *c* and pinion *c'*, this support C, together with its appendages, may be adjusted and set at any desired inclination. The stem of the pinion passes transversely through said box, and has a thumb-button, *c''*, affixed to one end, as clearly shown in figs. 2 and 3. The spindle *b* enters a standard or pedestal, D, and may be sustained upon a step at *e*, so that the globe may be rotated about a vertical axis. The globe A is constructed of two hemispherical sections, divided at the equator, as shown in fig. 1, and attached together by a sliding-latch or otherwise. The clock mechanism, which is sustained by the hollow shaft B, may be made in any of the well-known ways which will give one revolution in twenty-four hours. The clock-work which I have represented in the drawings is an ordinary marine clock, having its main-spring shaft, *f*, coinciding with the axis of the hollow shaft B, about which the globe revolves. This arrangement brings the axis of the spring shaft *f* in such a position that the spring can be wound up by means of a key introduced into one end of the said hollow shaft. The movement is communicated to the globe from the clock-work by means of a pinion-wheel, *g*, which is attached to a tube, *g'*, upon the day-wheel shaft *h*, by means of a friction clamp. This wheel *g* engages with the teeth of a wheel, *j*, which is rigidly affixed to one hemisphere of the globe and within the latter, as shown in fig. 1. In this way the globe is revolved around the fixed shaft B once in twenty-four hours. By attaching the pinion-wheel *g* to its tubular arbor, *g'*, by means of friction clamps, as above stated, the globe may be turned about its axis by hand, in either direction, without in any manner deranging the clock-work, and without stopping the clock. The globe A is kept in gear with the clock-work by means of two collars *i i'*, which are affixed at its poles to the shaft B, by means of set-screws, as shown in fig. 1. The index hand *k*, which is fixed rigidly to the upper end of the support C, as shown in figs. 1 and 3, points to a dial upon the globe, and indicates the time at places upon different degrees of longitude, or the difference of the time between any place on the globe and the place where the clock is used. The local time is indicated upon a meridian ring, G, which is sustained upon the upper end of the box *a*, and which is stationary with respect to the globe. This ring has the twenty-four hours marked off upon it, running from the upper half of the meridian on each side of a vertical line passing through the

diameter of this ring, as shown in figs. 2 and 3. The index for pointing out local time upon the meridian ring is applied to the globe, and may be constructed as follows: n n are two index hands arranged on each side of the ring G , and applied to a curved rod, p , in such manner that both indices can be moved up to or from the said ring, so as to admit of the detachment of the ring from the globe or the section of the globe from the ring or from each other.

Having thus described one mode of arranging clock-work within a movable globe, so that the globe shall be revolved once in twenty-four hours, I do not confine my invention to this particular mode, as it is evident that the clock mechanism can be arranged and applied in a variety of ways so as to effect the desired result.

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

1. Providing for the winding up of a globe clock through an aperture in the axle or shaft of rotation of the globe within which the clock is contained.

2. Having the winding-up shaft of a globe clock coincident with the axis of rotation of the globe within which the clock mechanism is contained.

3. Sustaining a globe clock upon an adjustable support, C , or its equivalent, substantially as described.

4. Supporting a globe clock, by means of a vertical spindle, upon a pedestal, in such manner that the globe can be rotated about a vertical axis, substantially as described.

5. The combination of a fixed index, k , and movable index, n , with a globe which is rotated automatically, substantially as described.

6. Sustaining a globe, which is rotated by means of clock-work, upon a tubular shaft in such manner that the clock spring can be wound up without detaching the sections of the globe, substantially as described.

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Witnesses:

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