No. 617,589. Patented Jan. 10, 1899.

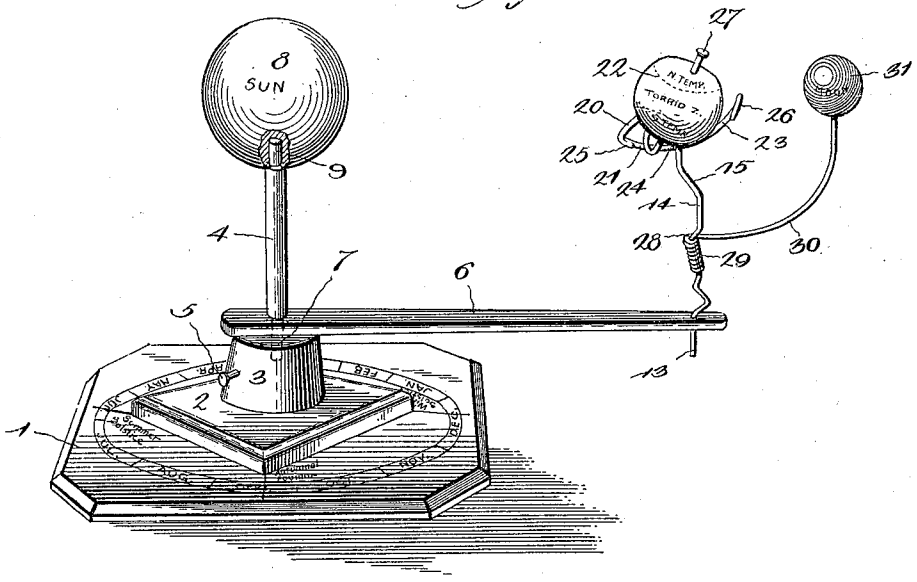
J. E. LYONS.

TELLURIAN.

(Application filed May 11, 1898.)

(No Model.)

Fig. 1.



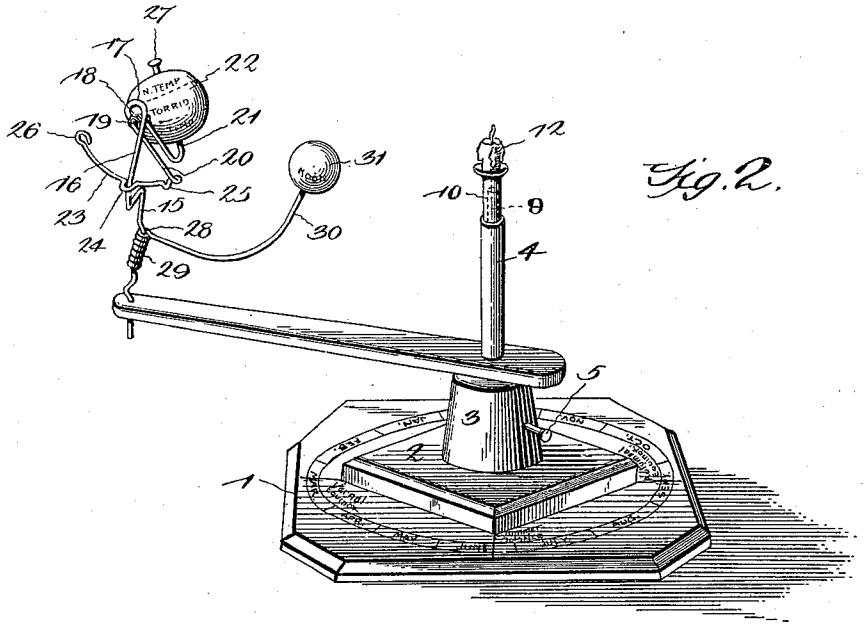


Fig. 2.

Witnesses
J. Grauflenbergwell,
[illegible]

John E. Lyons, Inventor.
By his Attorneys,
C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN EDMUND LYONS, OF WEST CARLISLE, OHIO.

TELLURIAN.

SPECIFICATION forming part of Letters Patent No. 617,589, dated January 10, 1899.

Application filed May 11, 1898. Serial No. 680,408. (No model.)

To all whom it may concern:

Be it known that I, JOHN EDMUND LYONS, a citizen of the United States, residing at West Carlisle, in the county of Coshocton and State of Ohio, have invented a new and useful Tellurian, of which the following is a specification.

My invention relates to educational appliances, and particularly to a tellurian designed for illustrating the relative and individual movements of various planets of the solar system; and the object in view is to provide a simple and efficient construction adapted to be manufactured at a small cost and designed for "class" and other use.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figures 1 and 2 are perspective views, in different positions, of an apparatus constructed in accordance with my invention, the former illustrating a sun-globe, and the latter a candle in lieu of such globe. Fig. 3 is a detail sectional view of the earth-globe to show the relation between the spindle and the headed stem.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

Supported by a disk 1, which is preferably angular in plan, is a base 2, having at its center a socket 3, in which is stepped the lower end of a sun-globe standard 4. A pin 5 may be used to secure the lower reduced end of the standard 4 in the socket 3, and said reduced portion is extended above the plane of the upper surface of the socket to form a journal, upon which is mounted a swinging support consisting in the construction illustrated of an arm 6. The standard 4 is shouldered at the upper end of the journal portion 7 and is reduced and shouldered at its upper end to support the sun-globe 8, and upon said reduced or spindle portion 9, at the upper end of the standard 4, may be removably fitted a socket 10, (see Fig. 2,) whereby when it is desired to employ light in connection with the apparatus in order to illustrate different phenomena with relation to the earth and moon globes the candle-holder, as shown in Fig. 2, may be applied to said spindle 9 to support a candle 12.

In the outer end of the supporting-arm 6 is formed a vertical bearing for the reception of the lower spindle portion 13 of an earth-globe-supporting frame constructed as follpws: 14 is a stem rising approximately vertically from the supporting-arm and terminating at its lower end in said spindle 13 and having a lateral offset 15 at an intermediate point, whereby the upper arm 16 of the stem is arranged in a different plane from the body portion 14 thereof. The upper end of the stem is doubled upon itself to form an eye 17, which terminates in a transverse bearing 18, consisting of a coil which is integral with the stem. In this bearing-coil is mounted the journal portion 19 of a swinging bracket 20, of which one end forms an earth-globe spindle 21 and upon which is mounted an earth-globe 22, and the other end of said bracket is deflected to form a segmental or arc shaped retaining-arm 23, concentric with the journal 19 and provided with a plurality of offsets forming seats for engagement with the offset portion 16 of the stem. When the intermediate seat 24 is engaged with the stem, the earth-globe spindle 21 is arranged at an angle of twenty-three and one-half degrees to the plane of the earth's orbit, whereas when one of the terminal seats 25 and 26 is in engagement with the stem the earth-globe spindle is either perpendicular to or parallel with the plane of the earth's orbit. Secured in the axial opening of the earth-globe is a headed stem 27, whereby axial rotation may be imparted manually to the earth-globe, and in the inner end of this stem is a seat for the reception of the contiguous extremity of the spindle 21.

An intermediate portion of the stem 14 forms a journal 28 for a bearing-coil 29, formed integral with the inner end of a moon-globe-supporting arm 30, the moon-globe 31 being attached to the outer extremity of said arm, and in order that during the swinging movement of the moon-globe-supporting arm around the earth-globe the orbit of the moon-globe may rise and fall the necessary distance—namely, five degrees—above and below the plane of the ecliptic said journal portion 28 is deflected slightly from the line of the stem 14, as clearly shown in the drawings.

Various members of the apparatus embodying my invention may be suitably marked to represent distances and relative positions,

proportions, and other data with relation to the bodies represented in connection with the tellurian. For instance, the disk 1 may have inscribed upon the upper surface thereof a graduated circular scale spaced to represent the twelve monthly divisions of a year, and the base 2, which is preferably rectangular, should be so positioned upon the surface of the disk 1 that one of its diagonals is coincidental with a diametrical line of said scale or connects the points marked "summer solstice" and "winter solstice." Also other data may be inscribed upon the supporting-disk and the base, such as that relating to the number of planets and other celestial bodies in the solar system, the order of such bodies as to distance from the sun, their order as to size, and the length of time necessary for the different evolutions of the heavenly bodies, &c. In the same way the supporting-arm 6 and the several globes may be suitably inscribed to indicate the sizes, diameters, relative distances, &c., thereof.

It will be understood, furthermore, that in operation the earth-globe-supporting frame, which is revoluble upon its axis 13, may be grasped by one hand of the lecturer and held against rotation with relation to space while the supporting-arm 6 is moved about its axis 4 in order to show the orbital movement of the earth-globe, while the axial inclination thereof remains uniform, and by means of the other hand the lecturer may illustrate the diurnal revolution of the earth. Also the swinging of the moon-globe-supporting arm about its inclined journal 28 may be accomplished to illustrate the phases of the moon, eclipses, and like phenomena.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a tellurian, the combination with a base and a swinging arm, of an earth-globe-supporting frame swiveled for rotary movement upon said arm, a bracket fulcrumed upon said supporting-frame for swinging movement in a vertical plane, and provided with an earth-globe spindle, which, by the movement of the frame, may be arranged in different angular positions, said bracket also having a laterally-yielding segmental arm provided with spaced means for engagement with an element of the supporting-frame, for securing the bracket with the earth-globe spindle at the desired inclination, substantially as specified.

2. In a tellurian, the combination with a swinging arm, of an earth-globe-supporting frame having a stem swiveled upon said arm, and a bracket fulcrumed for swinging movement upon the stem, provided with an earth-globe spindle, and having a segmental retaining-arm provided with spaced seats for engagement with the stem to secure the bracket at different adjustments, substantially as specified.

3. In a tellurian, the combination with a swinging arm, of an earth-globe-supporting frame having a stem swiveled upon said arm and provided at its extremity with a transverse bearing, and a bracket having a journal portion mounted in said bearing, a terminal earth-globe spindle, and a segmental retaining-arm provided with lateral offsets forming seats for engagement with the stem to maintain the earth-globe spindle at the desired adjustment, substantially as specified.

4. In a tellurian, the combination with a swinging arm, of an earth-globe-supporting frame having a stem swiveled upon said arm and provided at an intermediate point with a lateral offset, said stem being terminally provided with a coil-bearing, a bracket having a journal portion mounted in said bearing for swinging movement, terminating at one end in an earth-globe spindle, and at the other end provided with a segmental arm having lateral offsets forming seats for engagement with the stem, to maintain the earth-globe spindle at the desired adjustment, substantially as specified.

5. In a tellurian, the combination with a swinging arm, of an earth-globe-supporting frame having a stem swiveled upon said arm and terminating at its upper end in a transverse bearing, a swinging bracket having an intermediate journal portion mounted in said bearing, having an earth-globe spindle terminating in a bearing-point, and also provided with a segmental retaining-arm having lateral offsets for engagement with said stem of the supporting-frame, and a headed stem fitted in said opening of the earth-globe and provided at its inner end with a seat for the reception of said bearing-point of the earth-globe spindle, which projects into the opening of the earth-globe through the opposite end from said headed stem, substantially as specified.

6. In a tellurian, the combination with a swinging arm, of an earth-globe-supporting frame having a stem swiveled upon said arm and carrying an earth-globe spindle, an intermediate portion of said stem being slightly offset to form a journal portion 28, and a moon-globe-supporting arm provided with a bearing fitted upon said journal portion, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN EDMUND LYONS.

Witnesses:
A. D. PRESTON,
F. C. WELLING.