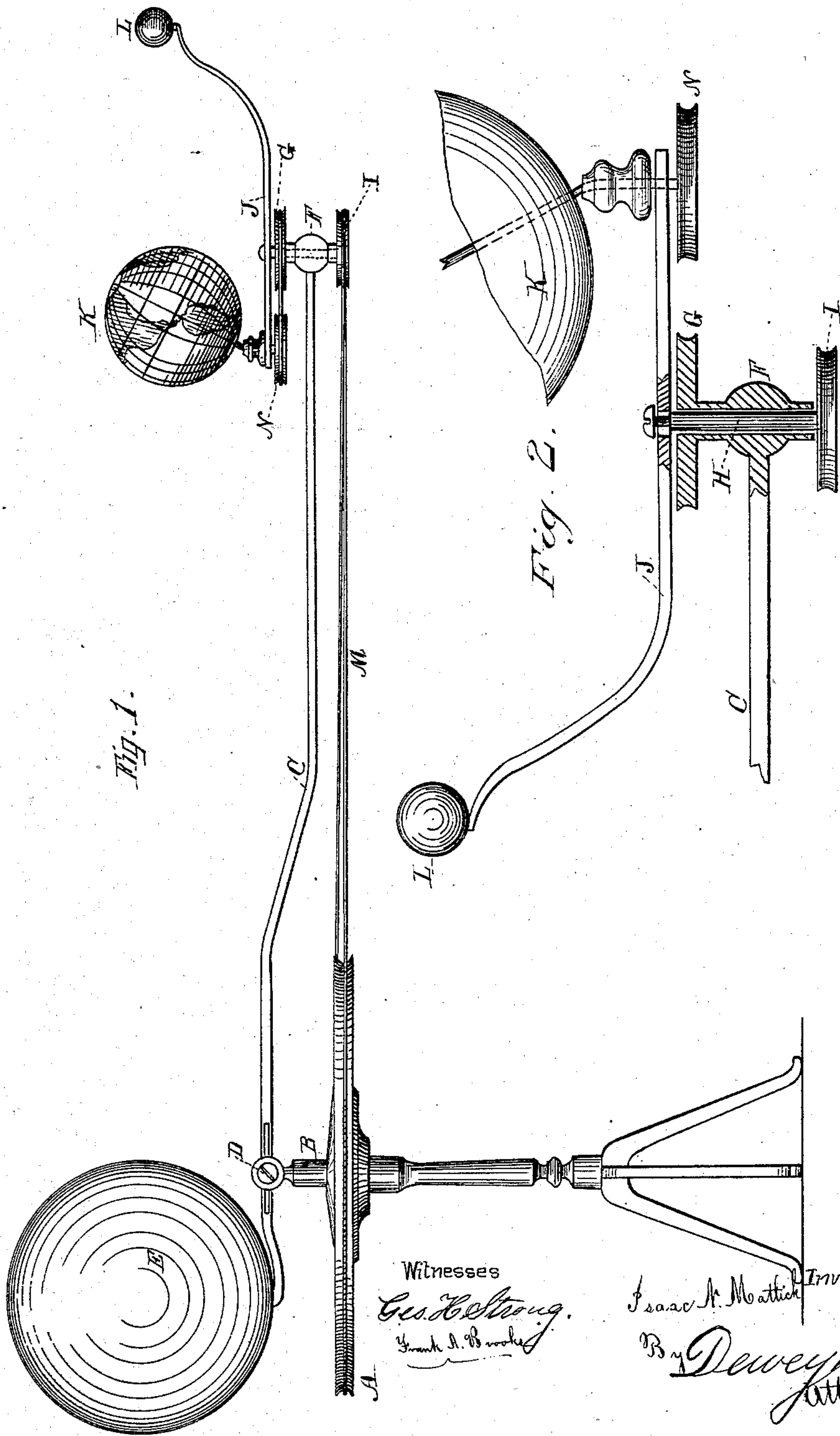


(Model.)

I. N. MATLICK.
Tellurian.

No. 239,815.

Patented April 5, 1881.



Witnesses

Geo. Kellogg.
Frank A. Brooks

Isaac N. Matlick Inventor
By Dewey & Co. Attys

UNITED STATES PATENT OFFICE.

ISAAC N. MATLICK, OF SAN FRANCISCO, CALIFORNIA.

TELLURIAN.

SPECIFICATION forming part of Letters Patent No. 239,815, dated April 5, 1881.

Application filed July 8, 1880. (Model.)

To all whom it may concern:

Be it known that I, ISAAC N. MATLICK, of the city and county of San Francisco, and State of California, have invented an Improved Tellurian; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in that class of apparatus which are intended to illustrate the movements of the heavenly bodies, and which are called "tellurians."

It consists in special construction of the mechanism for illustrating the movements of the heavenly bodies, as fully hereinafter described, and specifically claimed.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of my tellurian. Fig. 2 is a detail of construction.

A is a plate or table, having a standard, B, extending upward from its center, this standard turning in a suitable socket and adapted to receive the arm C, which may pass through a hole in it and be held at any point by a set-screw, D. This arm has a globe, E, representing the sun, supported upon the shorter portion close to the standard, while a vertical sleeve or socket, F, is secured to the outer end of the long arm. Upon the top of this sleeve is fixed a pulley, G, which is stationary with the rod and sleeve. A spindle or stem, H, passes vertically through the sleeve, and has a pulley, I, secured to its lower end, while the upper end is adapted to receive an arm, J, which is secured so as to turn with the spindle and pulley I. The arm J projects upon each side of its point of support, having a short and a long arm, as shown. The globe K, representing the earth, is supported from the shorter arm, and the smaller one L, which represents the moon, is supported from the longer arm.

In order to produce the movements of the sun, the earth, and moon about each other, dependent upon their relative bulk, they are mounted upon the ends of these arms C J, so that when the mechanism is rotated the sun will describe a small circle about the standard or point of support B. The earth and moon will also rotate in circles of different diameter around the center upon which the arm J is

mounted. This movement of the earth and moon is caused by a belt, M, which fits in a groove in the edge of the plate A. This plate acts as a stationary pulley, and the belt or cord passes from it around the pulley I at the lower end of the spindle H, so that when the arm C is moved around to describe a circle and cause the earth and moon to revolve around the sun, the belt will act upon the pulley I, and cause the spindle H and its connected parts to rotate, as before described.

The proportionate diameter of the plate A and the pulley I are such that the moon will be revolved around the earth thirteen and one-third times while the earth passes once around the sun, thus bringing the moon into the proper position to the earth at each change, while compensating for the advanced position of the earth in its movement around the sun.

The earth is mounted upon a standard which turns loosely in the end of the arm J, and has its upper end bent or inclined so that the earth will stand at the proper angle with the plane of the ecliptic.

A pulley, N, is secured to the lower end of the standard which supports the earth, and a belt passes around this pulley and around the pulley G, which is fixed upon the end of the arm C. The pulley N is a little smaller than the pulley G, the proportions being about as twelve to thirteen, and when the apparatus is set in motion each revolution of the earth about the center H also moves its standard about one-twelfth of a revolution, so that it will have made a complete revolution when the earth has made one revolution about the sun. This movement preserves the earth in the proper position to the plane of the ecliptic during its passage around the sun, and with the north pole always directed to one objective point.

It will be manifest that the movements here shown as being produced by the two belt-pulleys G and N may also be produced by gear-wheels, by introducing an intermediate gear between the two main ones, these latter being maintained in the relative proportions given above.

The rod C slides through a slot or hole in the standard B, and the belt M may be tightened at will by loosening the set-screw D and

moving the rod until the belt is tight, when it may be set up again.

The arm J is slotted where it fits upon the top of the spindle H, and by loosening the holding-screw the belt between the pulleys G and N may be properly tightened. By thus mounting the earth and moon upon an arm which is pivoted so as to allow them to move around a common center, the relative movements which are induced by their proportionate bulk will be readily shown. The angle of the earth to the plane of the ecliptic, and the movement of the moon around the earth in a different plane, shows the approach and receding of the moon from the earth in its rotation around the latter, and its positions in apogee and perigee, in an accurate manner and with the least possible mechanism. By this arrangement I am also enabled to explain the action of the two tides which occur upon opposite sides of the earth—one under the moon, caused by its direct attraction, and the other opposite to it, and caused by the centrifugal force of the revolution of the earth in a comparatively small circle about their common center of gravity.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent is—

1. In combination with the stationary plate and pulley A, with its standard B, the arm C and the socket F, the vertical spindle H, with its pulley I, adapted to receive a belt and be driven from the pulley A when moved around it, and the arm J, secured to the spindle and carrying the globes K and L at its opposite ends, so that they will be rotated about a common center, substantially as and for the purpose herein described.

2. The earth-globe K, supported upon an inclined standard, as shown, said standard turning loosely in the end of the arm J, and having a pulley, N, secured to its lower end, and connected by belt with the stationary pulley G, of slightly larger diameter, secured to the socket F or arm C, or equivalent gearing, so that the north pole of the earth will be directed to one objective point, as described.

In witness whereof I have hereunto set my hand.

ISAAC N. MATLICK.

Witnesses:

S. H. NOURSE,

FRANK A. BROOKS.