(No Model.) 2 Sheets—Sheet 1.

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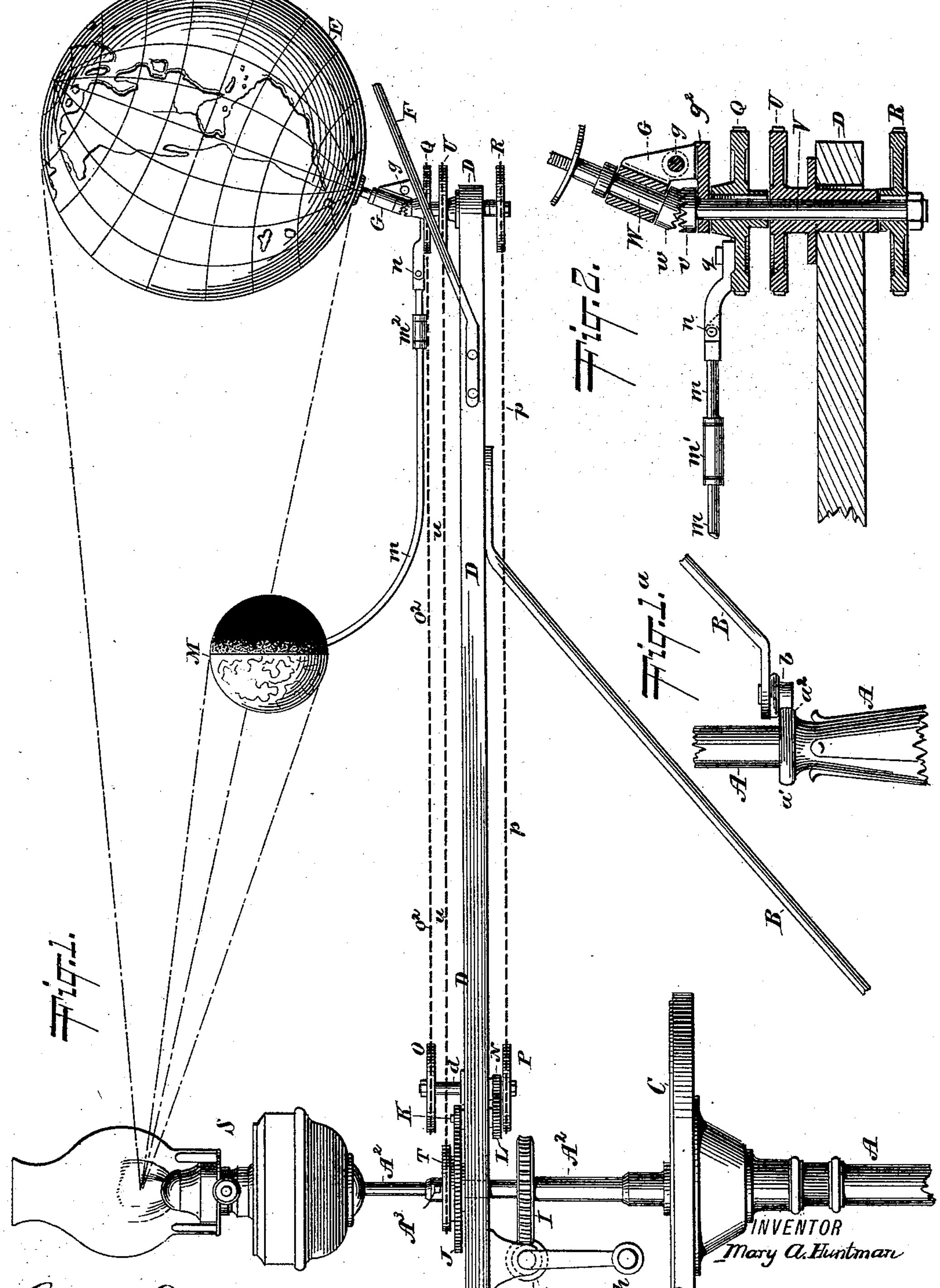
TELLURIAN.

No. 491,017. Patented Jan. 31, 1893.



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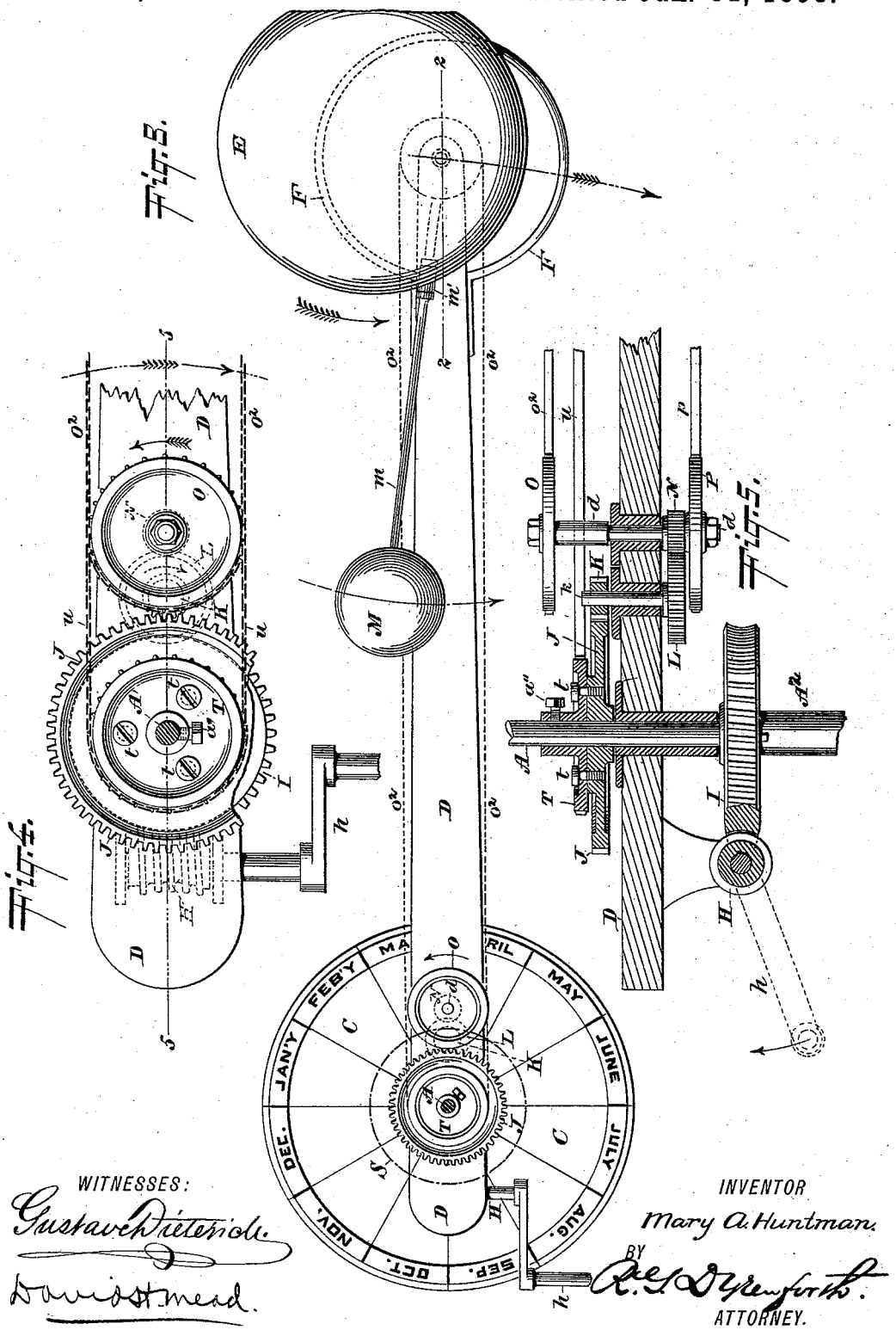

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TELLURIAN.

SPECIFICATION forming part of Letters Patent No. 491,017, dated January 31, 1893.

Application filed April 4, 1892. Serial No. 427,615. (No model.)

To all whom it may concern:

Be it known that I, MARY ANNA HUNTMAN, a citizen of the United States, residing at Stapleton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Tellurians; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to tellurians.

The object of the invention is to produce a tellurian having simplified mechanism for showing the polar and axial movements of the earth and its revolution around the sun, the change of the seasons, the movements and phases of the moon, and other phenomena occurring in that branch of study for the elucidation of which such a device is employed.

With these objects in view, the invention consists in the novel construction and combination of parts of a tellurian as will be hereinafter fully described and claimed.

In the accompanying drawings, forming part of this specification and in which like letters of reference indicate corresponding parts, Figure 1—is a side elevation of the tellurian, showing the relative positions of the different parts; Fig. 1ª—is a detail view of a portion of the base or standard; Fig. 2—is a sectional detail view partly in side elevation, showing more particularly the mechanism for revolving the spheres representing the earth and the moon, and also the mechanism for adjusting the earth-sphere to any desired inclination; Fig. 3—is a top plan view, showing more particularly a chart or calendar upon which is delineated in this instance, the months of the year; Fig. 4—is a detail plan view of a portion of the actuating mechanism, and Fig. 5—is an enlarged detail sectional view in side elevation, taken on the line 5—5 of Fig. 4.

Referring to the drawings, A designates a base or support in which is journaled a vertical stationary shaft A^3, the said base carrying a chart or calendar C. Upon this shaft is mounted a swinging-bracket D, which is held in a horizontal position by means of a brace-rod B, one end of which is secured to the bracket, the other end being provided with a roller *b* adapted to travel on a track a^2 on the base.

Keyed or otherwise secured upon the shaft A^2 below the swinging bracket is a screw-gear I which is engaged by a worm H suitably journaled on the bracket, a crank *h* serving to impart motion to the worm and from it, by interposed mechanism, to the different operative parts of the device. Upon the shaft above the bracket are mounted a gear-wheel J and a sprocket-wheel T, the latter being held against rotation on the shaft by means of a set screw A^3, and the former by screws *t* which bind the wheels T and J firmly together. The upper end of shaft A^2 supports a lamp S which is to represent the sun.

Within the bracket D, adjacent to the shaft A^2, are journaled two vertical shafts *k* and *d*, the former of which carries at its upper end a gear-wheel K meshing with gear J and at its lower end a gear L meshing with a gear N on the lower portion of shaft *d*. The latter shaft carries at its upper end a sprocket-wheel O, and at its lower end a similar wheel P.

Near the outer or free end of the bracket is journaled a vertical shaft V, the lower end of which carries a sprocket wheel R around which passes a sprocket-chain *p* to sprocket-wheel P. The upper portion of shaft V carries two sprocket-wheels Q and U, the former of which is connected to sprocket-wheel O by a sprocket-chain o^2, and the latter with sprocket-wheel T by sprocket chain *u*. The upper end of shaft V is provided with a ratchet-disk *v* designed to be engaged by a similar disk *w* carried by the lower end of a shaft W, the upper end of which carries the globe or earth-sphere E. This latter shaft is journaled in an adjustable bearing G which is pivoted to a support g^2 on shaft V, a set-screw *g* serving to hold the globe at any desired inclination.

At a point near the free end of the bracket is secured a circular upward inclined track or guide-way F designed to be engaged by a friction roller m^2 carried by an arm *m*, one end of which is curved upward and carries a globe M representing the moon, the other end of the arm being hinged or pivoted at *n* to a bracket *q* carried by sprocket-wheel Q.

Having described the different parts of the

apparatus, I will explain its manner of operation. When it is desired to cause the earth and the moon to rotate around the sun, the crank *h* is turned, which movement, through the medium of worm-gear I, rotates shaft A^2 and causes the bracket D to turn. By the sweep of the bracket, all the mechanism is operated through the medium of the gear-wheels J, K, L and N, the sprocket-chains and the sprocket-wheels actuated thereby. The distinctive movements of the earth are accomplished as follows: The orbital movement is produced by sprocket-chain *u* and sprocket-wheels T and U, the bearing G, which supports the globe-shaft W, being held at any desired angle by means of the set-screw *g* by which means any given direction of the pole is maintained. The axial movement of the earth is obtained by means of sprocket-chain *p* and sprocket-wheels P and R, by which, through the medium of shafts V and W, and ratchet-disks *v* and *w*, the earth is caused to revolve on its own axis. The revolution of the moon around the earth is accomplished by means of sprocket-chain o^2 and sprocket-wheels O and Q. As the bracket D sweeps through a circle, the friction pulley m^2 on the arm *m* will contact with and ride up the track F thus causing the different phases of the moon, the upward incline of the track causing the first and the second quarters, and the downward incline, causing the third and the fourth quarters.

It is to be understood that the gear-wheels and sprocket-wheels are to be so proportioned as to their respective sizes that the different movements will be theoretically correct in order that the moon's phases, and the position occupied by the earth with relation to the sun, may be correctly represented.

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

1. In a tellurian, the main vertical shaft, the lamp representing the sun supported upon the said shaft, the bracket journaled on the main vertical shaft, shafts journaled in the bracket one of which is provided with a ratchet-head, a shaft carrying a globe representing the earth, at its upper end and having a ratchet-disk at its lower end engaging the ratchet-head, an adjustable-sleeve in which said shaft is journaled, sprocket-wheels carried by the shafts connected by chains, an arm pivoted to one of the sprocket-wheels carrying the moon-globe at one end, a roller on the arm, the inclined-track secured on the bracket adapted to be engaged by the roller, and gear mechanism carried by the main vertical shaft for actuating the sprocket-wheels, substantially as described.

2. In a tellurian, a main vertical shaft, a lamp representing the sun supported thereon, a bracket journaled on the main vertical shaft, a brace-rod secured to the bracket at its outer end and carrying a roller on its inner end which engages a track on the vertical shaft, shafts journaled in the bracket one of which is provided with a ratchet-head, a shaft carrying a globe representing the earth at its upper end and having a ratchet-disk at its lower end engaging the ratchet-head, an adjustable-sleeve in which said shaft is journaled, sprocket-wheels carried by the shafts connected by chains, an arm pivoted to one of the sprocket-wheels carrying the moon-globe at one end, a roller on the arm, the inclined-track secured on the bracket adapted to be engaged by the roller, and gear mechanism carried by the main vertical shaft for actuating the sprocket-wheels, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MARY ANNA HUNTMAN.

Witnesses:

R. G. DYRENFORTH,

DAVID H. MEAD.