

No. 613,111.

Patented Oct. 25, 1898.

C. J. BOEHM.  
TELLURIAN.

(Application filed Feb. 28, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

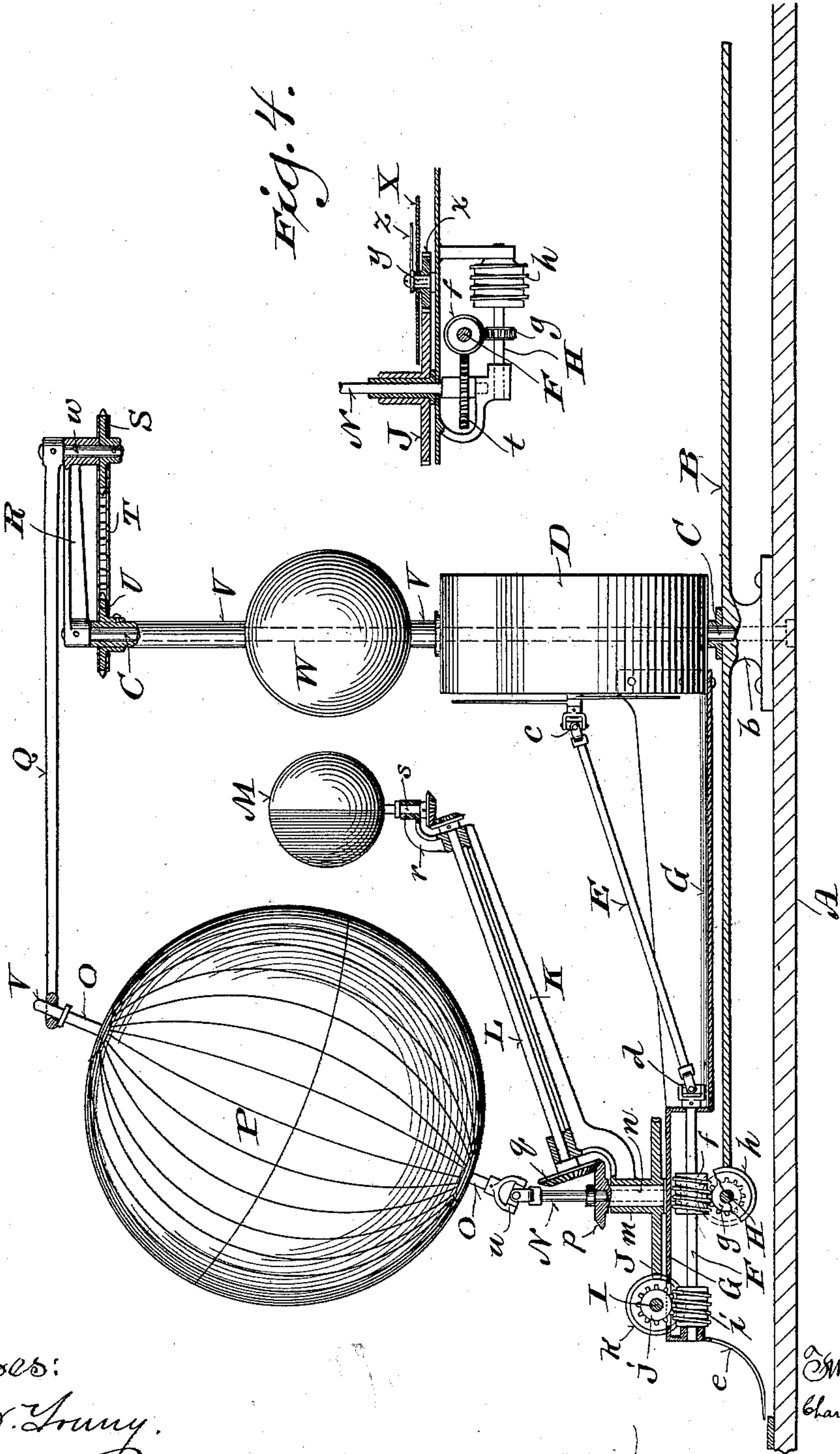
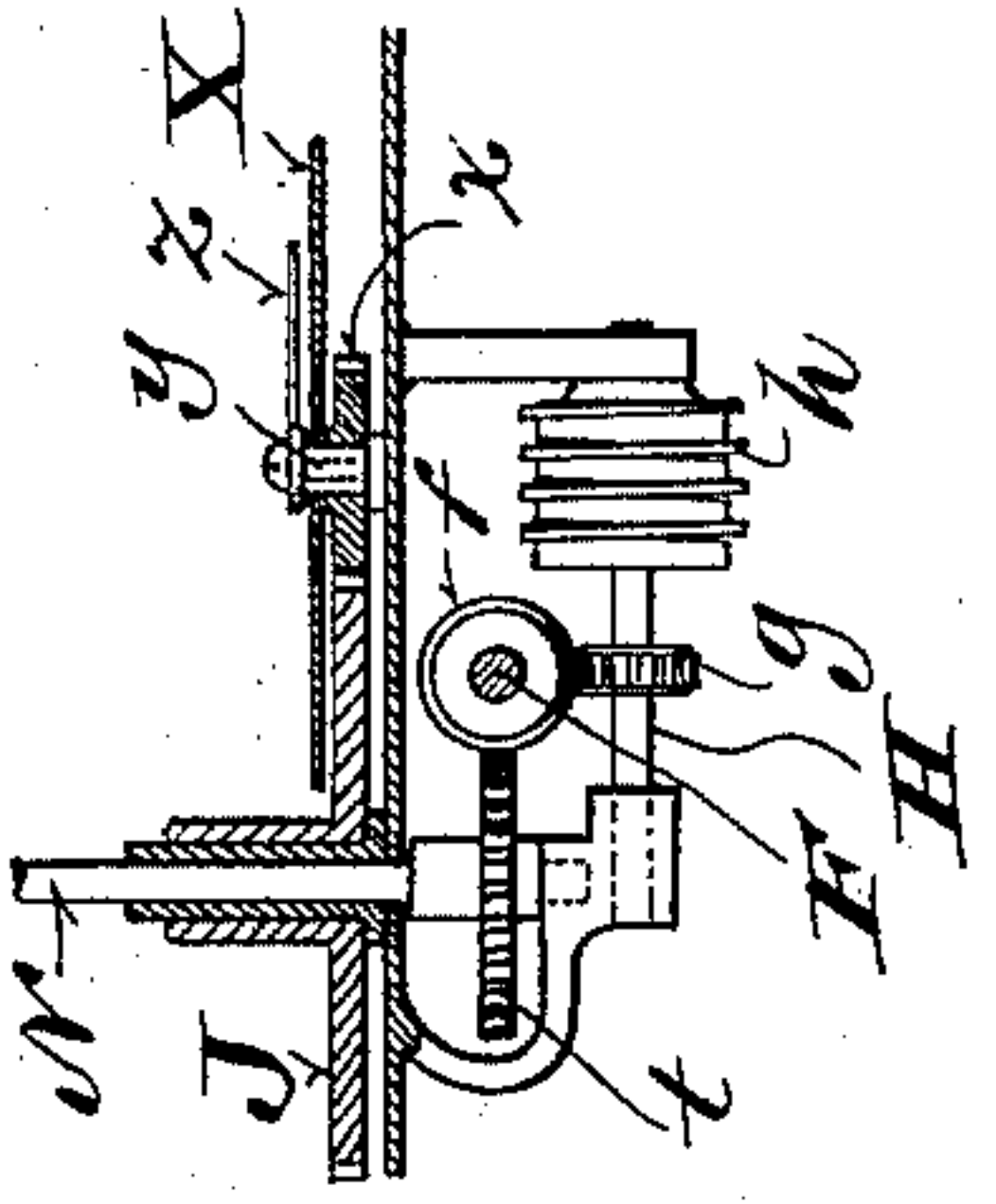


Fig. 4.



Witnesses:  
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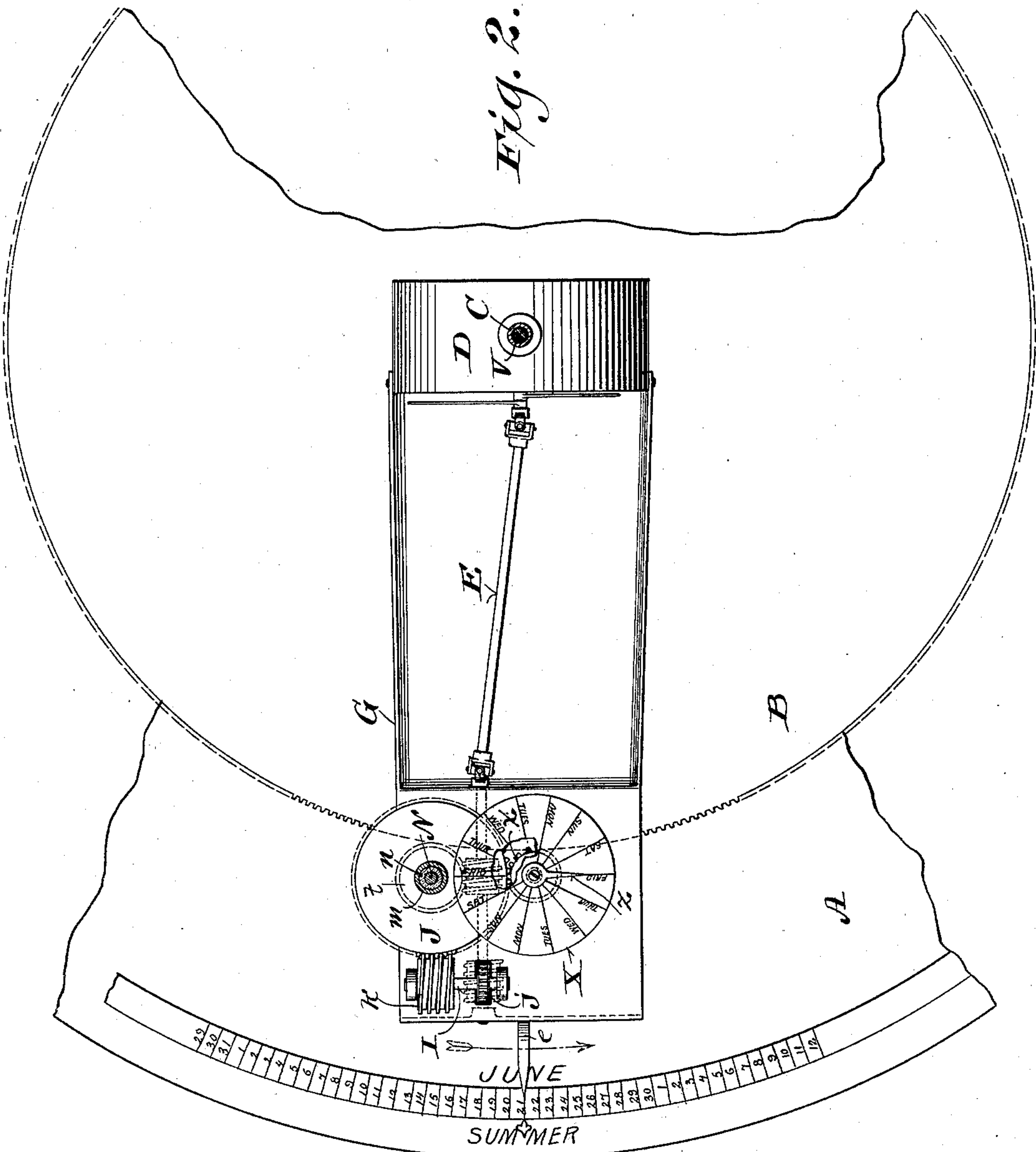
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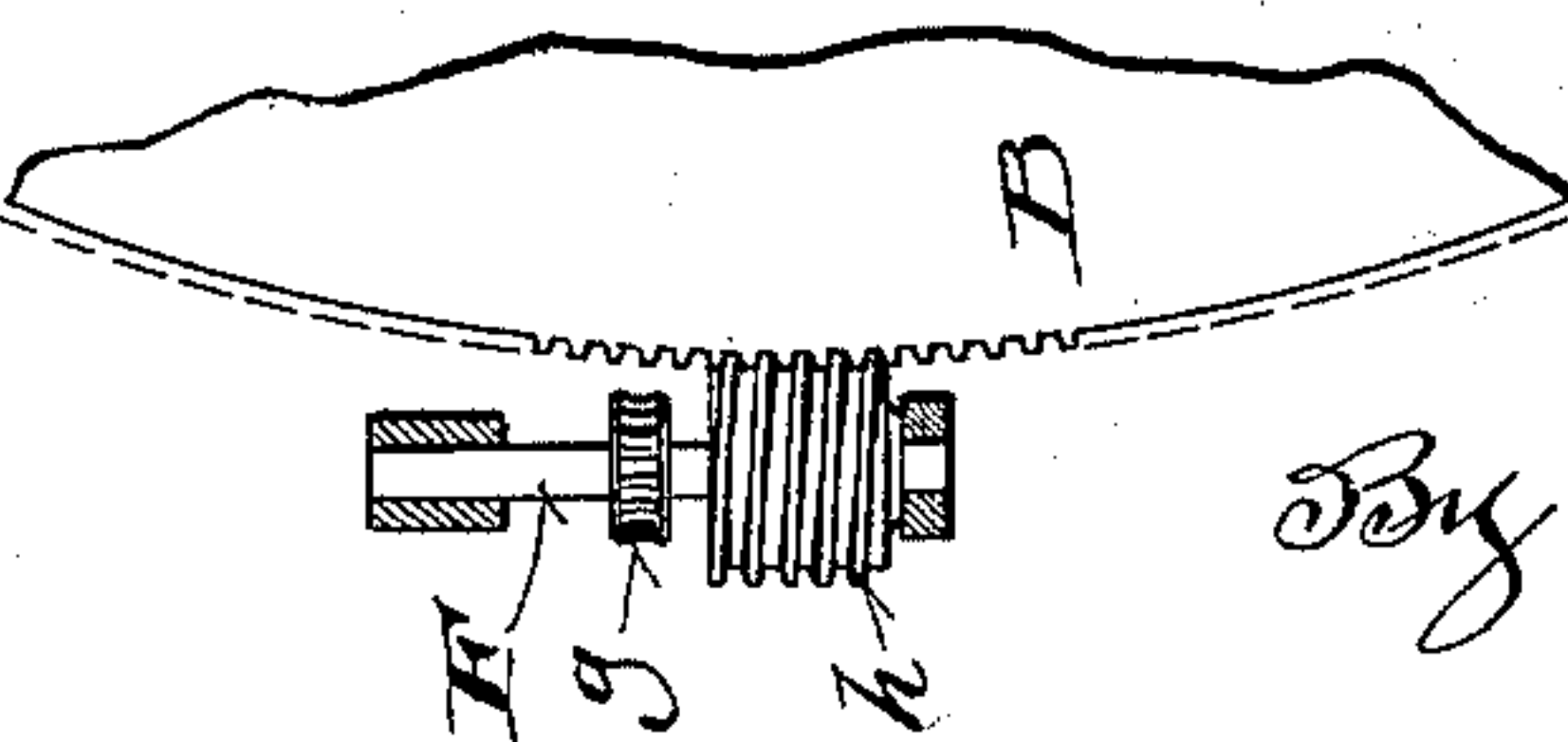
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*Witnesses*  
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*Fig. 3.*



*Inventor:*

*Charles J. Boehm*

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# UNITED STATES PATENT OFFICE.

CHARLES J. BOEHM, OF MILWAUKEE, WISCONSIN.

## TELLURIAN.

SPECIFICATION forming part of Letters Patent No. 613,111, dated October 25, 1898.

Application filed February 28, 1898. Serial No. 671,962. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES J. BOEHM, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Tellurians; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide simple, economical, and automatic tellurians.

It therefore consists in certain peculiarities of construction and combination of parts constituting the apparatus hereinafter specified with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a partly-sectional elevation of a tellurian constructed in accordance with my invention; Fig. 2, a plan view of a portion of the tellurian, partly in horizontal section; Fig. 3, a detail plan view, partly in section, illustrating a gear mechanism that constitutes part of said tellurian; and Fig. 4, a detail elevation, partly in section, illustrating another gear mechanism embodied in the aforesaid tellurian.

Referring by letter to the drawings, A represents a preferably circular base, and at intervals of concentric circles thereon the seasons and months of one year and the numerical order of days in each month are denoted. The constellations of the zodiac may be also denoted in their proper order upon the base. A circular plate B of suitable diameter is provided with a central depending boss *b*, having a bottom flange made fast to the center portion of the base, upon the upper side of same.

Extending up through base A and plate B, central of the same, is a rigid pivot-post C for a rotary clock D, that constitutes a motor for the various coöperating gear mechanisms hereinafter specified.

The hour mechanism of the clock has universal-joint connection *c* with a rod E, that is also connected by a universal joint *d* with an arbor F, suspended in bearings under a plate G, attached to said clock to extend at right angles thereto beyond the plate B, its outer end being provided with a pointer *e*, that travels in a circle parallel to that on which the numerical order of days of the months are denoted on the base A of the apparatus. A

worm *f*, fast on the arbor F, meshes with a twelve-tooth worm-pinion *g*, fast on another arbor H, also suspended in bearings under plate G, these arbors being at right angles to each other. A worm *h* on the arbor H meshes with peripheral teeth of the plate B, the number of these teeth to be seven hundred and thirty, or twice the number of days in one year, inasmuch as there are two revolutions of pinion *g* each day of twenty-four hours. Another worm *i*, fast on arbor F, meshes with a twelve-tooth worm-pinion *j*, fast on another arbor I, that turns in bearings rising from plate G, and a worm *k* on the latter arbor meshes with a fifty-nine-tooth worm-wheel J, the hub *m* of which constitutes part of an inclined bracket K, this hub being loose on a hollow vertical stud *n*, rising from said plate. The plate G is slotted to permit the engagement of worm *i* with pinion *j*, and the plate-stud *n* is provided at its upper end with a stationary bevel gear-wheel *p*, having another bevel gear-wheel *q* in mesh therewith, this latter gear-wheel being fast on a shaft L, that rotates in bearings rising from the aforesaid bracket. An arm *r* of the bracket constitutes a bearing for a vertical stem *s*, having bevel-gear connection with shaft L, and fast on the stem is a globe M, designed to represent the moon, one half of this globe being arbitrarily distinguished from the other half by any suitable means, so as to denote the light and dark of the moon.

Extending up through the stud *n* of plate G is a spindle N, having a twenty-four-tooth worm-wheel *t* fast on its lower end and in mesh with the worm-pinion *f* on arbor F aforesaid. The upper end of the spindle N is in universal-joint connection *u* with a rod O, on which a globe P is rigidly secured, this globe representing the earth and having revolution on its axis once in every twenty-four hours. The upper end of rod O is loose in an eye *v* at one end of a horizontal arm Q, and the other end of this arm is provided with a right-angle rigid stud W, that turns in the outer end of another arm R, fast on the upper end of pivot-post C, above specified.

The arm Q and its stud W constitute a crank, and fast to the lower end of the stud is a sprocket-wheel S, connected by a link



belt T with a similar wheel U, fast to a sleeve V, loose on pivot-post C, but fast to clock D, this sleeve being extended in opposite directions from a globe W rigid therewith, and  
5 serving to represent the sun.

The fifty-nine-tooth worm-wheel meshes with a fourteen-tooth pinion  $x$ , depending from a disk X, loose on a stud  $y$ , rising from plate G, and a pointer  $z$ , fast to the stud, in-  
10 dicates the days of one week delineated upon the disk, radially thereof.

The clock being started and kept running, the various mechanisms above specified will operate synchronous therewith, and the worm  
15  $h$ , engaging the peripheral teeth of the stationary plate B, will cause a rotation of said clock on its pivot-post once in one year, the periphery of said plate representing the orbit of the earth. Incidental to rotation of the  
20 clock the pointer  $e$ , depending from plate G, will mark the days of each month, the months themselves, the seasons, and signs of the zodiac properly displayed on the base A, while at the same time the moon and earth globes  
25 will revolve around the sun-globe and have rotation on their own axes.

Rotation imparted to the arm Q, timed to that of the clock, maintains the predetermined angle of globe P with respect to the globe W,  
30 this angle being that of the inclination of the earth's axis to the plane of its orbit.

The globe M is timed to have rotation on its axis once in every twenty-nine and one-half days, (approximately one lunar month,) coincident with a revolution in the same pe-  
35 riod around the globe P, whereby the phases of the moon with respect to the earth are demonstrated.

The fifty-nine-tooth wheel J moves the fourteen-tooth wheel  $x$  two teeth each day of twenty-four hours, and thus the disk X, having the days of the week delineated thereon, is made to revolve once each week under the stationary pointer  $z$ , the position of each ra-  
40 dial day-space on said disk with respect to said pointer at any time determining the ante or post meridian of that particular day.

The clock with the other mechanisms may be set forward or back to correct time, and  
50 in case of leap-year the clock may be stopped for twenty-four hours, or the mechanism set back one day, starting again on the 28th of February, it being practical to move the plate G and its connections around plate B with-  
55 out injury to said clock or machinery synchronous therewith.

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

60 1. A tellurian comprising a stationary peripherally-toothed circular plate, a fixed pivot-post central of the plate, a clock loose on the pivot-post and having its hour mechanism in gear with the toothed periphery of said plate,  
65 the gearing being so timed that the clock has axial revolution once in one year; a globe representing the sun in line with the axis of

the clock, a globe representing the earth hav-  
ing a lower axial extension, a spindle having  
universal-joint connection with said axial ex- 70  
tension of the earth-globe, a gear-train connecting the clock and spindle to revolve said earth-globe with said clock as well as to im-  
part diurnal revolution to this latter globe on  
its own axis, an arm fast on said pivot-post, 75  
a stud loose in the outer end of said arm, another arm fast at one end to the stud but hav-  
ing its other end loosely engaged by an upper  
axial extension of the earth-globe, and gear  
mechanism connecting the aforesaid clock 80  
with said stud, the length of the latter arm being such that said earth-globe is maintained  
in proper inclination to the plane of its orbit.

2. A tellurian comprising a stationary pe-  
ripherally-toothed circular plate, a fixed pivot- 85  
post central of the plate, a clock loose on the pivot-post and having its hour mechanism in  
gear with the toothed periphery of said plate,  
the gearing being so timed that the clock has  
axial revolution once in one year; a globe 90  
representing the sun in line with the axis of the clock, a globe representing the earth hav-  
ing a lower axial extension, a spindle having  
universal-joint connection with said axial ex- 95  
tension of the earth-globe, a gear-train connecting the clock and spindle to revolve said  
earth-globe with said clock as well as to im-  
part diurnal revolution to this latter globe on  
its own axis, an arm fast on said pivot-post,  
a stud loose in the outer end of said arm, an- 100  
other arm fast at one end to the stud but hav-  
ing its other end loosely engaged by an up-  
per axial extension of the earth-globe, gear  
mechanism connecting the aforesaid clock  
with said stud, and another globe represent- 105  
ing the moon also in gear-train with the clock  
to revolve around the earth-globe and have  
revolution on its own axis at intervals ap-  
proximating repetitions of a lunar month.

3. A tellurian comprising a base having cal- 110  
endarial matter in circular arrangement thereon, a peripherally-toothed circular plate  
fast to the base central of the same and hav-  
ing such diameter as will expose the calen-  
darial matter aforesaid, a fixed pivot-post 115  
central of base and plate, a clock loose on the pivot-post and having its hour mechanism in  
gear with the toothed periphery of said plate,  
the gearing being so timed that the clock has  
revolution once a year on its axis; a globe 120  
representing the sun in line with the axis of the clock, a globe representing the earth hav-  
ing a lower axial extension, a spindle having  
universal-joint connection with said axial  
extension of the earth-globe, a gear-train con- 125  
necting the clock and spindle to revolve said  
earth-globe with said clock as well as to im-  
part diurnal revolution to this latter globe  
on its own axis, an arm fast on said pivot-  
post, a stud loose in the outer end of said 130  
arm, another arm fast at one end to the stud,  
but having its other end loosely engaged by  
an upper axial extension of the earth-globe,  
gear mechanism connecting the aforesaid



clock with said stud, another globe represent-  
ing the moon also in gear-train with the clock  
to revolve around the earth-globe and have  
revolution on its own axis at intervals ap-  
5 proximating repetitions of a lunar month, a  
disk in gear-train with the clock to rotate  
once in seven days and having the days of  
the week denoted thereon in radial spaces, a  
stationary pointer adjacent to the disk, and  
10 another pointer movable with the clock ad-

jacent to the calendarial matter on the afore-  
said base.

In testimony that I claim the foregoing I  
have hereunto set my hand, at Milwaukee, in  
the county of Milwaukee and State of Wis- 15  
consin, in the presence of two witnesses.

CHAS. J. BOEHM.

Witnesses:

N. E. OLIPHANT,

GEO. W. YOUNG.