L. J. N. MOURET.

Clock-Work Globes.

No. 140,065. Patented June 17, 1873.

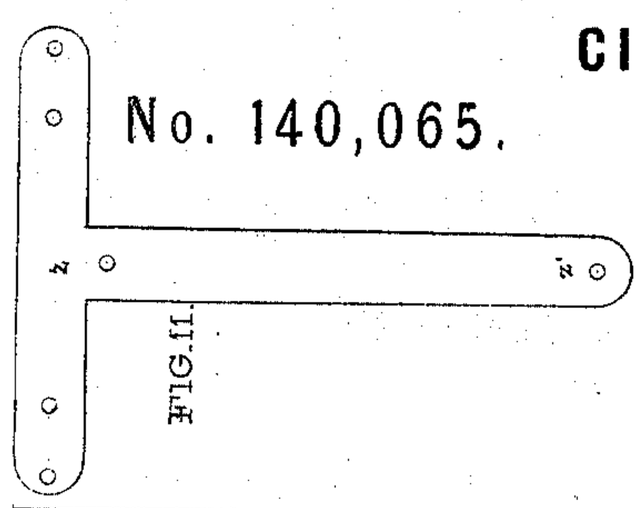

FIG. 11.

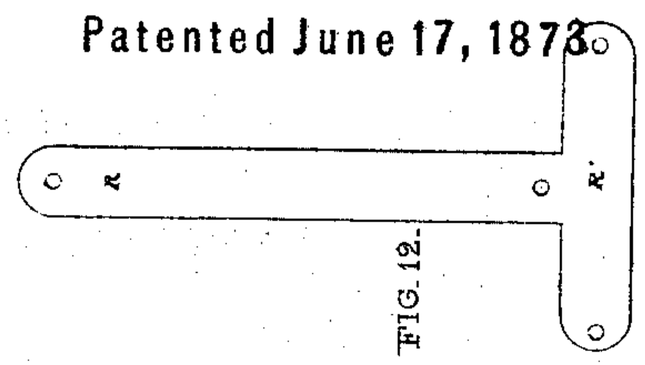

FIG. 12.

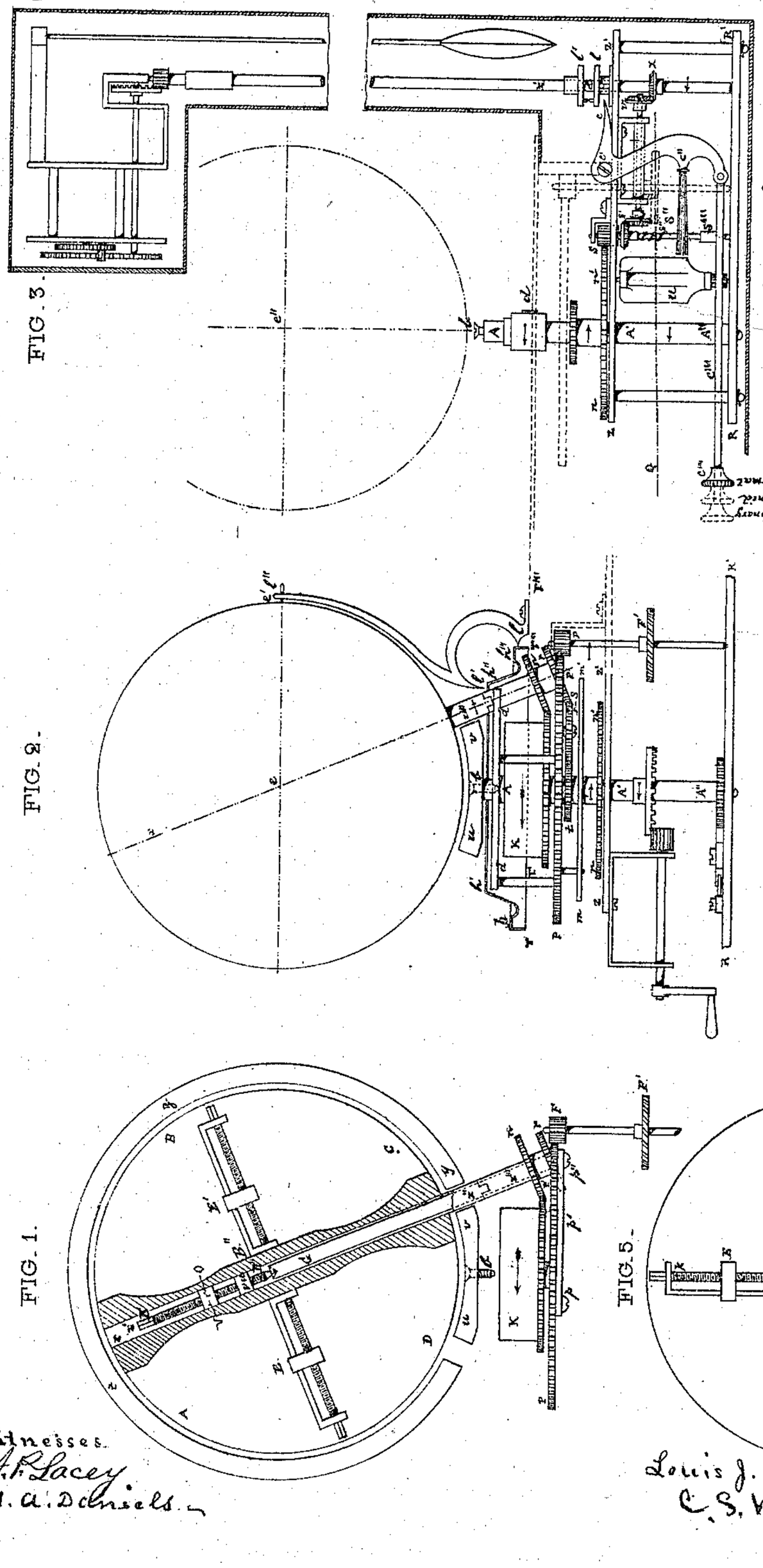

FIG. 3.

FIG. 4.

FIG. 9.

FIG. 10.

FIG. 8.

FIG. 7.

FIG. 6.

FIG. 2.

FIG. 1.

FIG. 5.

Witnesses.
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LOUIS JEROME NAPOLEON MOURET, OF PARIS, FRANCE.

IMPROVEMENT IN CLOCK-WORK GLOBES.

Specification forming part of Letters Patent No. **140,065**, dated June 17, 1873; application filed August 31, 1871.

To all whom it may concern:

Be it known that I, LOUIS JEROME NAPOLEON MOURET, of Paris, France, have invented certain Improvements in Imparting to Globes by Means of Clock-Work the Various Phenomena and Phases of the Earth, of which the following is a specification:

The object of this invention is to impart to globes the astronomical life of the planet we inhabit and to reproduce its various phenomena and phases; this is effected by means of clock-work with which the globe is put into communication.

The motive power originates in a barrel, and spring K, Figures 1 and 2, whose force is directed on a pinion, *n*, of the globe's axis *x x''*. This pinion prevents any oscillation of the globe and divides the force in two directions. The first occurs in traversing the annual or orbital wheel P P'. This traversing of the wheel I term diaphragming it, and, descending to *r*, returns toward the center which it had left, and, again redescending, reaches a shaft, S S' S'' S''', Figs. 3 and 4, fulfilling four missions. Received at this point of the shaft S, at which is a pinion, the force descends to a bevel-wheel, S', whence it directs itself toward the pendulum, attaining the perpendicular; thence it is directed toward the fly-wheel U of the globe wheel-work, (see Fig. 3,) for effecting a rapid rotation of the globe. These effects are produced by a metal eccentric piece, *c c' c''*, which, by means of handle *c''''* and shaft *c'''*, connects and disconnects two detents, *o o'*, (see Fig. 4,) and also acts as a brake by means of horse-hair brush *c''* attached thereto, stopping the fly U and producing instant immobility, when desired. By aid of this shaft the three following conditions of the globe are effected—that is to say, normal, rapid, and stationary—by pressing the button of the shaft completely in, partly drawing it out, or completely drawing it out, the mechanism for effecting which is hereafter referred to.

Fig. 4 shows the means employed of poising the globe.

A B C D is the globe. E E' E'' are weights traversed by the three screws, *e f*, *e' j*, and *e'' k*, serving to draw them together or to separate them, as desired, from the center of the globe to effect an equilibrium—that is to say, to make the geometrical center of the globe coincide with its center of gravity. Round the globe is a circle, *t u v y z*, showing the exact limit of illumination, and having two openings, *u* and *v*, for the passage of the shaft or axis of the globe. This latter part, marked *u v*, is a section of the circle of illumination and is maintained by the screw *b*, Figs. 2 and 3, screwed on the head of the orbital axis A A' A'' in the desired place and in such a manner that it is always the exact continuation of the circle, of which it is a part, the separation being necessitated for the double passage of the axis of the globe in March and September. The globe's axis is marked G and enters the tube *x x' x'' x'''*. B' B'' is the pivoting-point, maintained by the two nuts, *v o v u*. (See Fig. 1.) *p p' p''* is a false plate beneath the orbital wheel P P', and destined to receive at *d*, Fig. 6, the shaft G. The exact adjustment of this plate is effected by the screws *v v'*. The orbital wheel P P' has one hundred and forty-six teeth, and turns only the three hundred and sixty-fifth part in twenty-four hours. It is governed by a ten-toothed pinion, F, which, in its turn, is governed by a twenty-five-toothed wheel, F', governed by an endless screw, H, Figs. 7, 8, and 10, which is itself governed by a similar screw, S'', Figs. 3, 4, and 7, by means of the armatures D L N, traversed by a shaft, Q, Figs. 7 and 8, and act on it by aid of three pins, *a b c*, causing it to make a revolution in twenty-four hours. A plan of the orbital wheel is shown in Fig. 6. A metal indicator, *l l' l''*, (see Fig. 2,) points to the days and months, engraved on a disk, *h h' h'' h'''*, as well as the signs of the zodiac and center of illumination. By the point *l* it indicates the days and months marked or engraved on *h h'''*; by *l'* it indicates the signs of the zodiac engraved on *h' h''*; and by *l''* the center of illumination. *e e' e''* is part of the radius vector or line drawn from the center of the sun to the center of the earth. The meridian of a place is shown by a handle, J, and point *t*, attached to the endless screw H, indicating on a metal dial, (see Figs. 9 and 10,) bearing twenty-four divisions, which the point passes over in twenty-four hours. Z Z', Fig. 11, is the upper plate of the globe wheel-work,

and R R, Fig. 12, the lower plate. *r s t*, Fig. 6, are three toothed wheels, which I term aspective, whose object is to lead the force of the barrel-spring K from above the orbital wheel P P′ to beneath it. The center wheel is loose on it axis. These three wheels regulate the aspect of the globe.

Fig. 2 represents the greater part of the works, which are mostly known.

A A′ A″, Figs. 2 and 3, as already mentioned, is the axis of the orbital wheel, of one hundred and forty-six teeth, P P′. *d* is the pallet-plate of the barrel K. (See also Fig. 2.) *h h′ h″ h‴*, as above referred to, is the metal disk, resting on the base T T′ T″ T‴. *m m′* is the eccentric of the true time. *n n′* is a ninety-six-toothed wheel, transmitting motion to the pinion of eight teeth *s*, Fig. 3, whence it is communicated to S′; thence to *v;* then to X, a pinion whose shaft *x′* connects the movement of the globe with the pendulum. This shaft is capable of separation by aid of the nuts *l l′* actuated by the eccentric piece *c c′ c″ c‴* for rendering the globe rapid or stationary.

Supposing that the connecting-shaft (see Fig. 3) is separated at *a*, and that the part *x′* is supplied with a pivot which plunges at *a* into the head X, and that the nut *l′* is fixed below *x′*, while the nut *l* slides with a groove above X, if these two nuts are each furnished with a detent it is evident that in lowering the nut *l* X becomes immediately free of *x′;* and to reconnect them it is merely necessary to raise *l* to lock it with *l′*. It is this which renders the globe with rapidity and precision, by aid of the eccentric piece *c c′ c″*, either normal in connecting the two nuts, rapid by separating them, and stationary by bringing the brake *c″* to act on the fly *u*. These three rectilinear and backward and forward movements are shown in the drawing by dotted lines in front of the button *c⁗*.

The orbital wheel occupies one year to accomplish a revolution on its axis, and with a well-made globe, and in conjunction with a circle of illumination and a radius-vector, is rigorously exact and capable of reproducing all the phenomena of the astronomical life of our planet precisely as they occur in nature.

I claim—

1. The mechanism employed for regulating the poise of the globe, consisting of the weights E E′ E″ and screws *e f*, *e′ j*, and *e″ k*, operating together as and for the purpose described.

2. The mechanism for rendering at will the movement of the globe dependent or independent of the movement of the pendulum, by means of the eccentric piece *c c′ c″*.

L. J. N. MOURET.

Witnesses:

A. BLÉITRIT,

C. BLÉITRIT.