

G. M. STONE.  
Universal Chronometer.

No. 24,501.

Patented June 21, 1859.

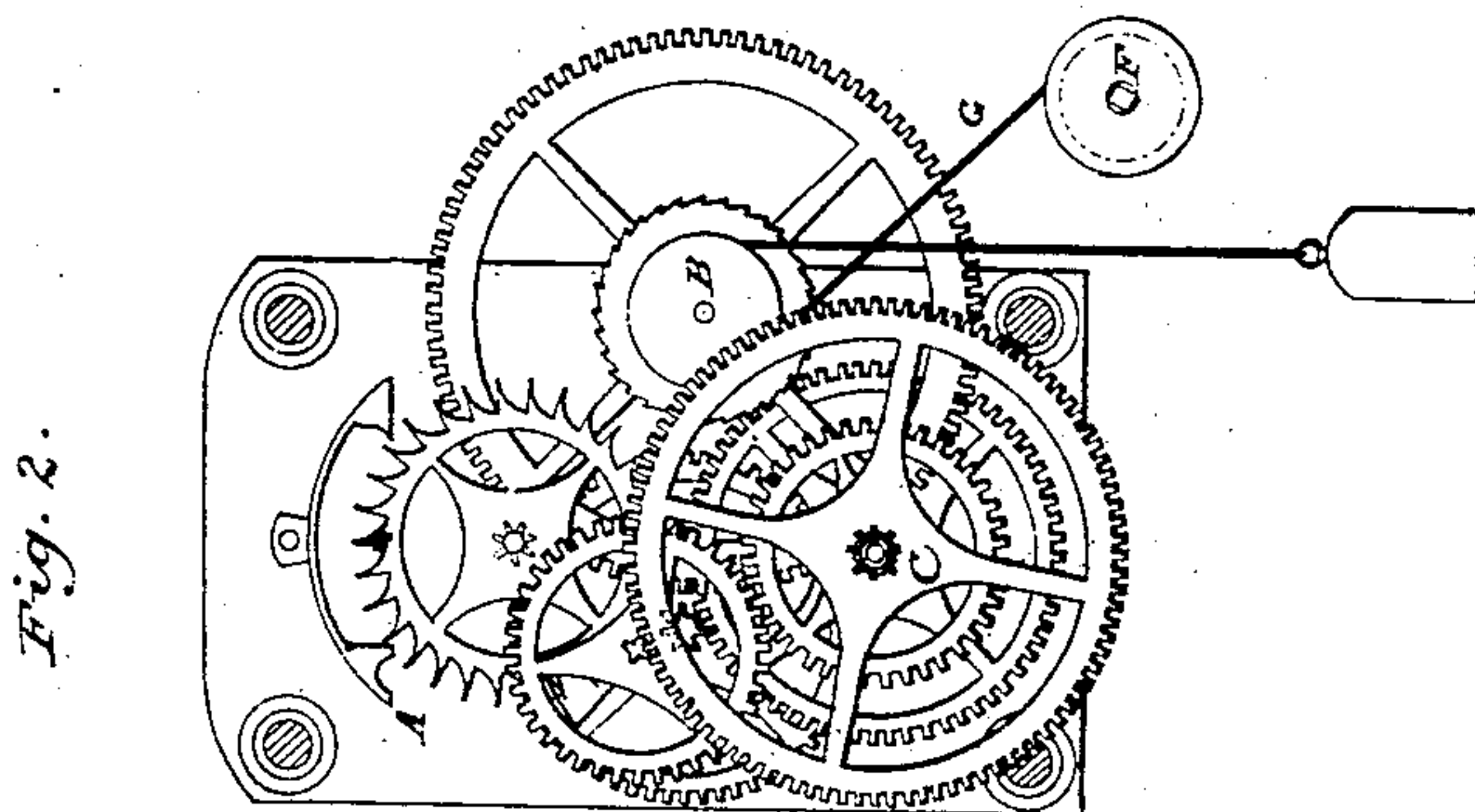
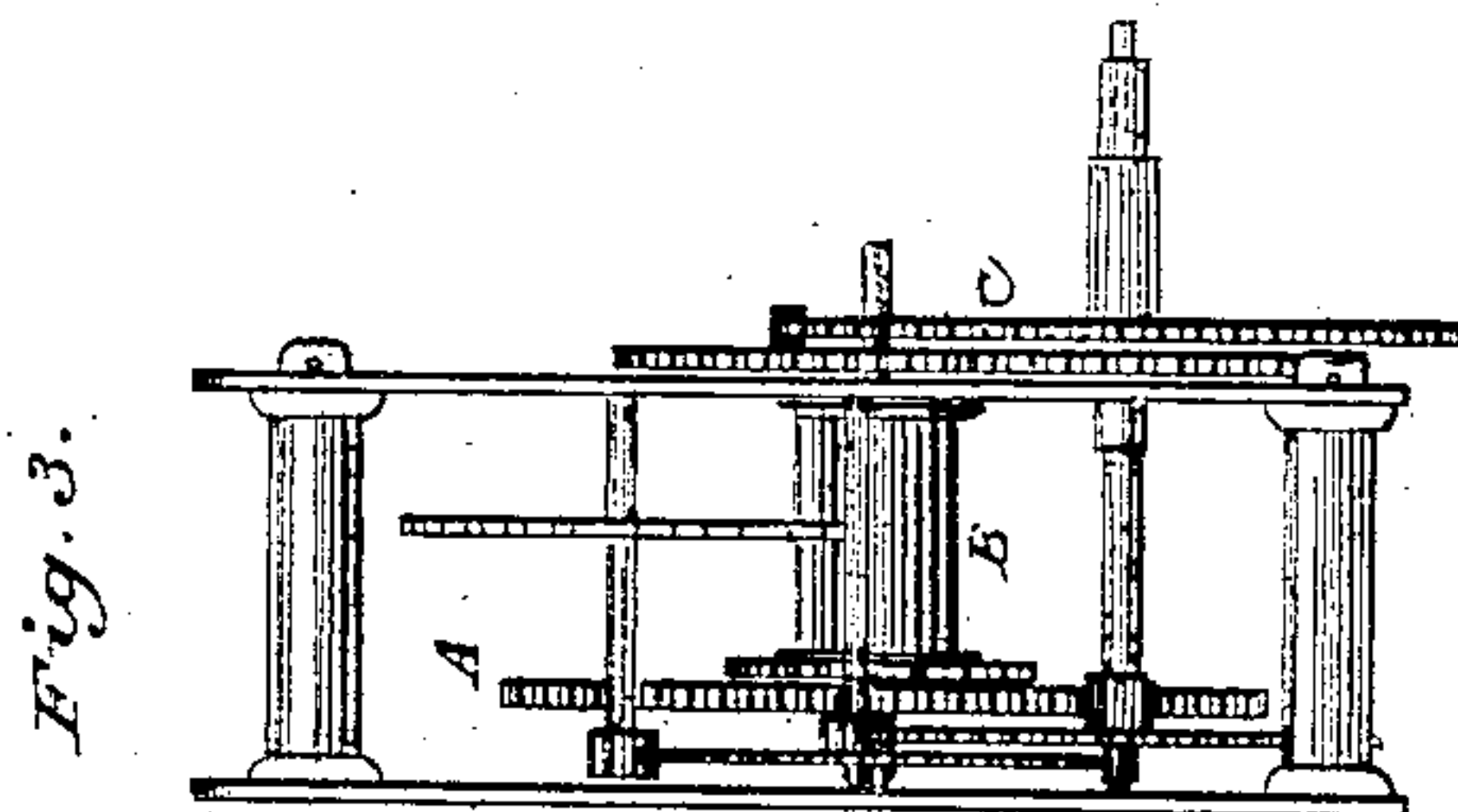
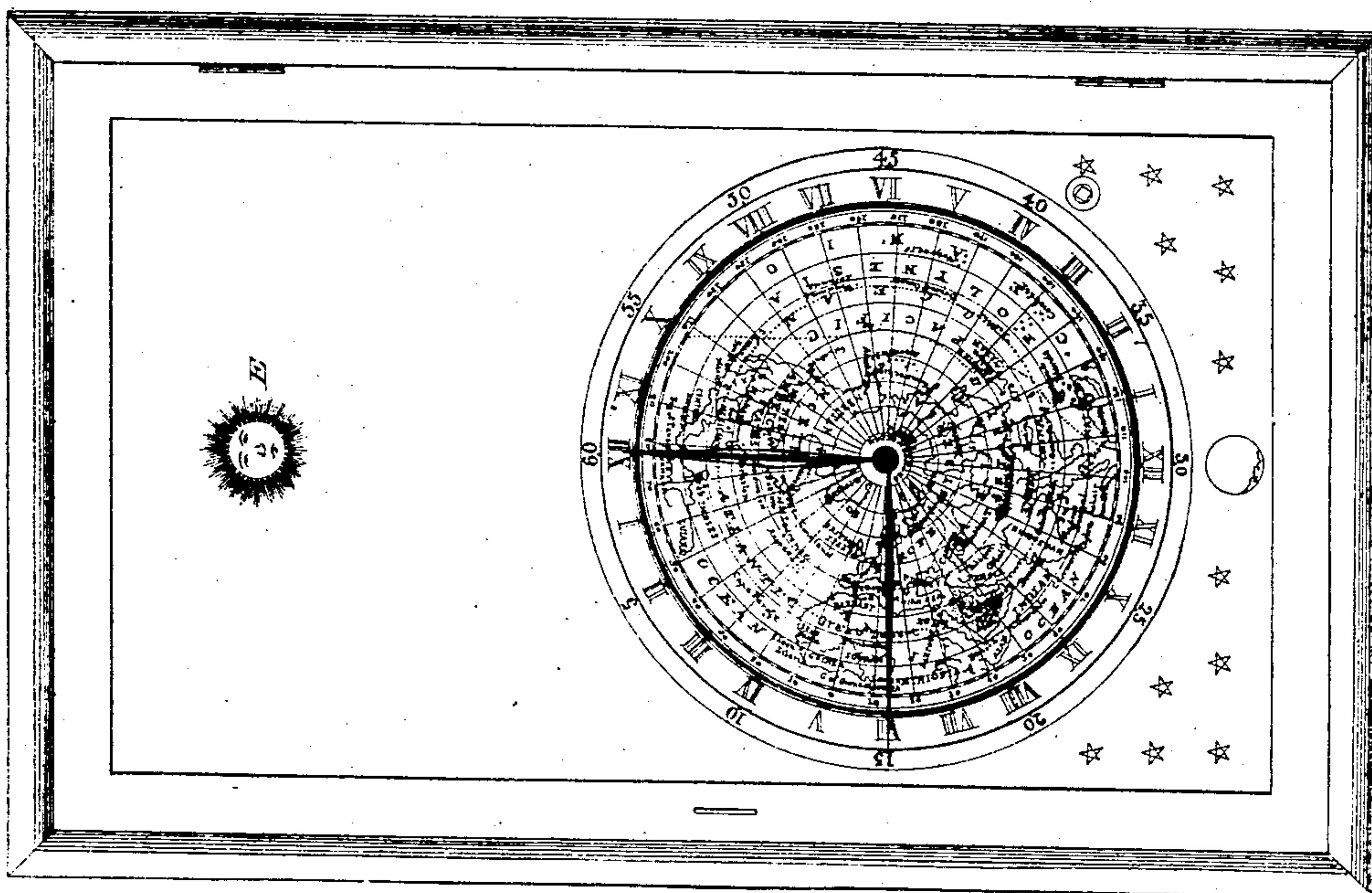


Fig. 1





# UNITED STATES PATENT OFFICE.

GILES M. STONE, OF FREDERICKSBURG, VIRGINIA.

## PANORAMIC ATTACHMENT FOR CLOCKS TO INDICATE THE COMPARATIVE TIME IN ALL LONGITUDES.

Specification of Letters Patent No. 24,501, dated June 21, 1859.

*To all whom it may concern:*

Be it known that I, GILES M. STONE, of Fredericksburg, in Spottsylvania county and State of Virginia, have invented certain new and useful Improvements in Timepieces, which I call the "Universal Chronometer"; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing through letters of reference marked thereon, forming part of this specification, in which—

Figure 1, represents a front view of the chronometer, incased; Fig. 2 a like view of the movement, the front plate being removed, and Fig. 3, a side view of the same.

The same letters of reference occurring in the several figures indicate the same parts.

My invention consists in constructing the movement and dial of a chronometer in such manner that it will at a glance indicate the time of day or night in any part of the Northern or Southern Hemisphere as the case may be as well as at the point at which it is located, and its particular utility is, to demonstrate the diurnal revolutions of the earth, and the causes of day and night, and will be found to be a very desirable piece of furniture for all public and private schools and other establishments for the diffusion of useful and scientific knowledge.

To enable others to make and use my invention I will describe its construction and operation.

The movement (A) consists of an ordinary train of wheels propelled by a weight suspended from the drum (B) by a line wound around it, or by a spring, as in the ordinary clock or watch movement, except that its revolution is reversed when intended to indicate time on the Northern Hemisphere so that the hands rotate from right to left, instead of from left to right as in the common timepiece, and except also that the hour hand is caused to make but one revolution in twenty-four hours instead of two, while the minute hand makes one revolution in every hour of the day and night.

To the sleeve of the wheel (c), which carries the hour hand, is attached a disk or hemisphere, on which is delineated the northern half of the earth's surface, with at least the capitals or principal cities of

each country accurately located thereon. The center of this disk represents the North Pole, or axis of the earth's rotation, and its periphery the equator which is divided off by radial lines, representing meridians of longitude into 360 degrees. This disk being caused to rotate in the same direction with regard to the sun (E), as the earth's motion, demonstrates clearly the causes of day and night, and at the same time indicates the time of day or night at any point on the Northern Hemisphere. Thus, by drawing a radial line through any point on the disk to its periphery, it will point to the hour of day or night on the dial, at that locality, all that part of the disk above a horizontal line drawn through the center from VI to VI on the dial representing day, and all below that line, night.

Example: The hour hand being set over the city of Washington, D. C., U. S. of America, and the time indicated there, being 15 minutes past 12 at noon as represented in Fig. 1, a radial line drawn through the city of London will indicate about 5 o'clock p. m. at that point; at Bombay it will be about 10 p. m.; in the Gulf of Siam it will be 12 o'clock at night; at the Sandwich Isles between 6 and 7 o'clock a. m., and in California about  $\frac{1}{2}$  past 9 a. m.

When a disk representing the Southern Hemisphere is intended to be used its rotation must be the reverse of that for the Northern Hemisphere and the figures on the dial must read from left to right in other respects the construction must be the same.

The revolving dial covering the entire movement prevents the introduction of a key through a hole therein as in the common clock for winding up the spring or weight. It is therefore necessary to wind up at the back or if that is inaccessible a separate drum (E) may be used arranged a little distance to the side or beneath the dial in which case an additional cord must be attached to the drum (B) the other end of which is connected with the drum (E) so that when the weight line is unwinding from the drum (B) the other will be winding on, and when it is desired to wind up the weight it may be done by turning the drum (E) when the line (G) will be wound on to it and off the drum (B) consequently

rotating said drum (B) and winding the weight line on to it. A variety of other devices might be used for this purpose but it is not deemed necessary to specify them  
5 here.

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

1. The chronometer dial divided off into  
10 24 equal parts for indicating the 24 hours of day and night by one revolution of the index point substantially as set forth.

2. The revolving disk representing the Northern or Southern Hemisphere for indi-  
15 cating the relative time of day or night at

any and all localities thereon in the manner specified.

3. The combination of the revolving disk with the twenty-four hour dial for demonstrating the cause of day and night by the  
20 diurnal revolutions of the former representing the revolutions of the earth on its own axis substantially as described.

In testimony whereof I have hereunto set my hand before two subscribing witnesses  
25 this 2nd day of May A. D. 1859.

GILES M. STONE.

Witnesses:

CHARLES C. WELLFORD,  
WM. M. SMITH.