

(No Model.)

2 Sheets—Sheet 1.

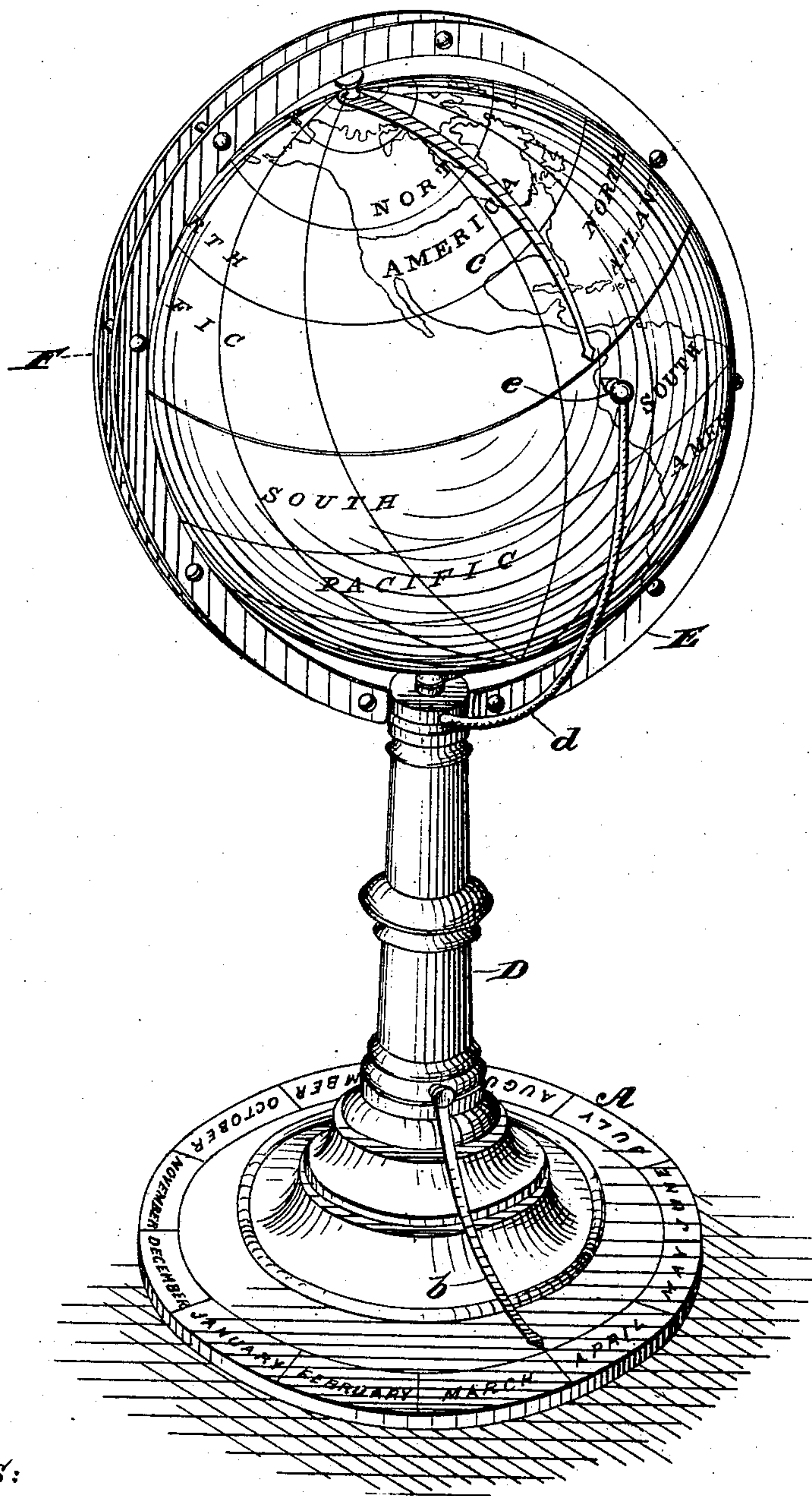
H. H. GROSS.

MOUNTING TERRESTRIAL GLOBES.

No. 248,259.

Patented Oct. 11, 1881.

Fig. 1.



Witnesses:

A. H. Norris,

Robert Everett,

Inventor:

Howard H. Gross,

by West & Bond,
Attys.

(No Model.)

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Fig. 2.

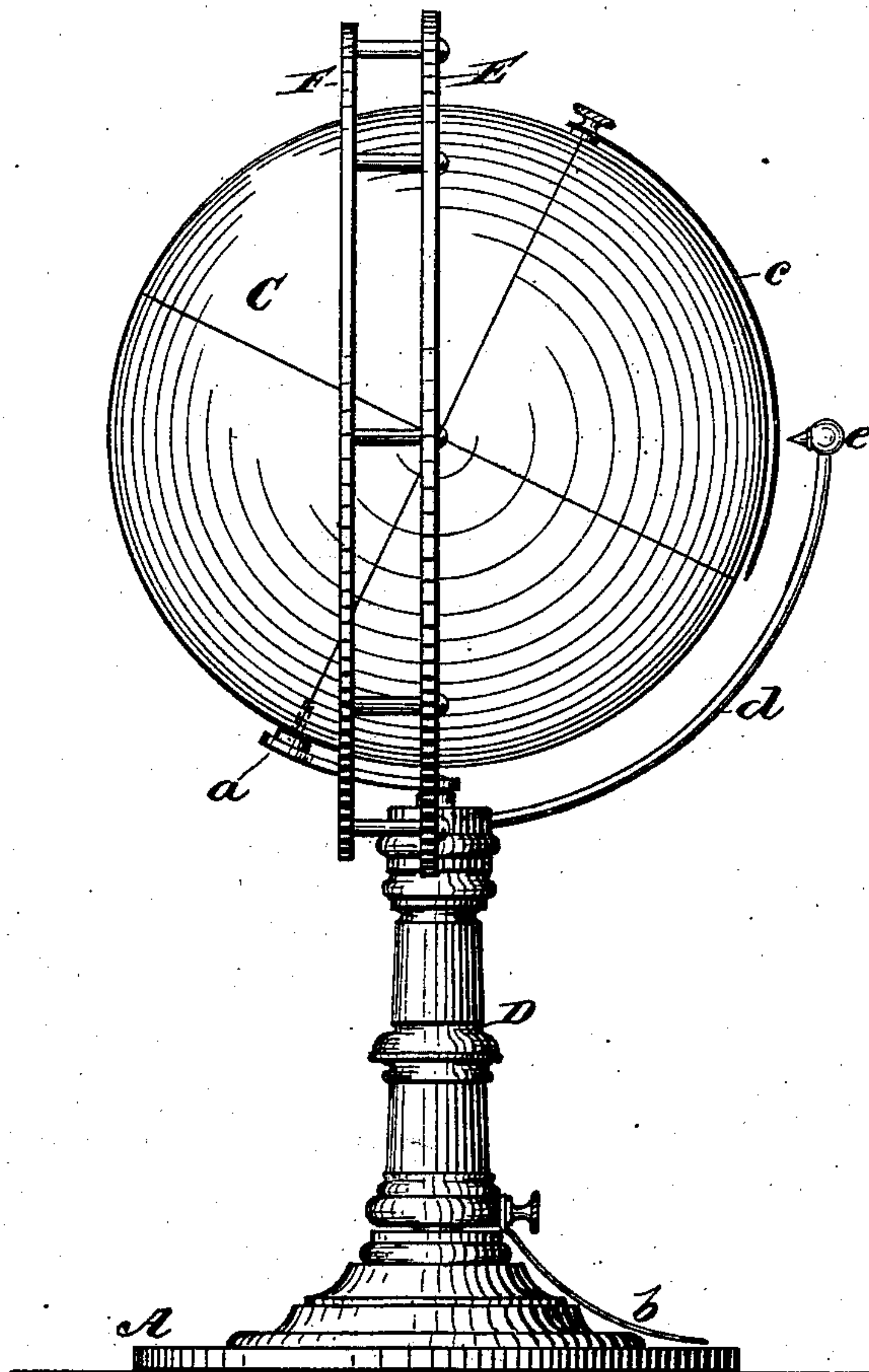
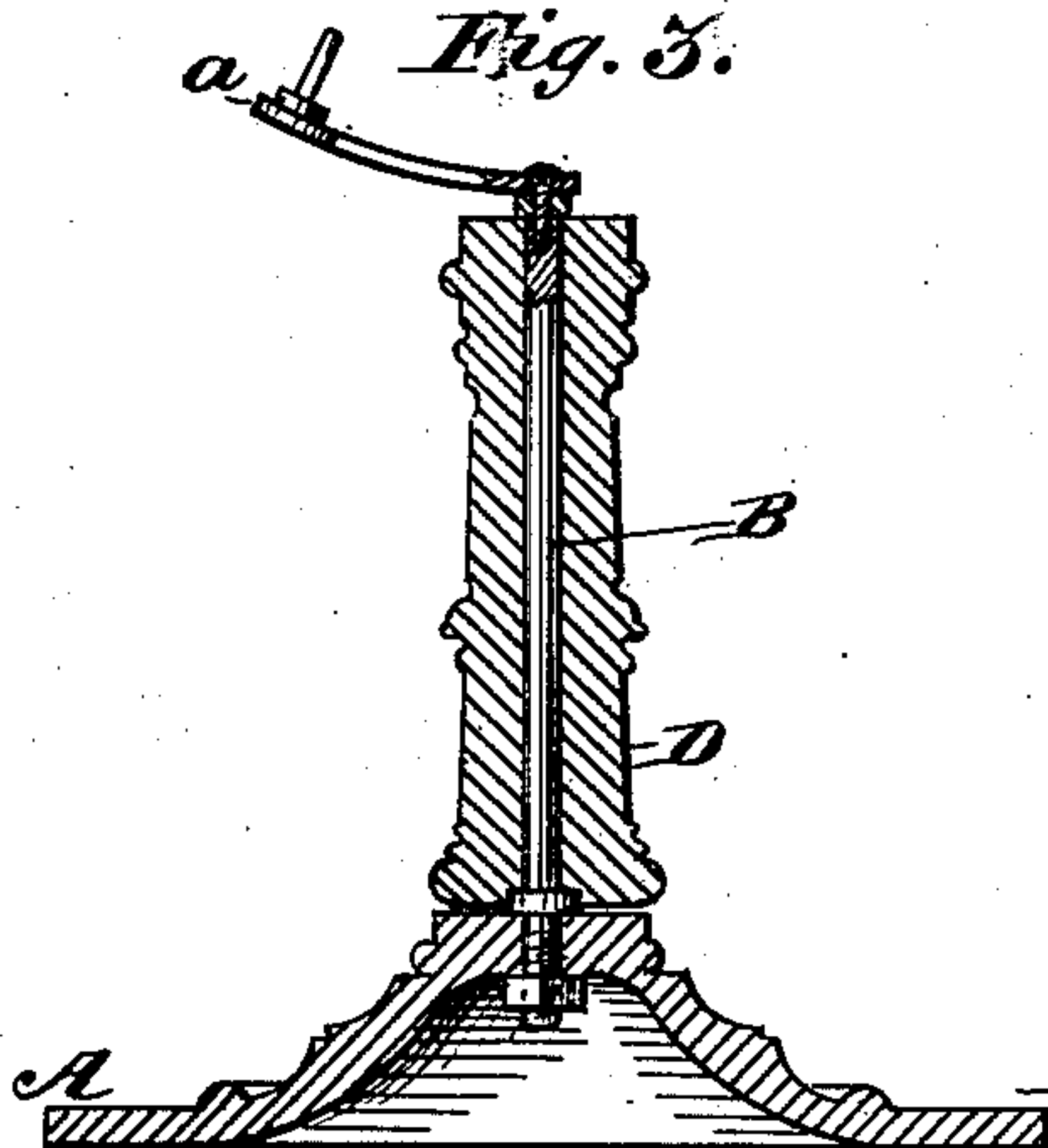


Fig. 3.



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UNITED STATES PATENT OFFICE.

HOWARD H. GROSS, OF ENGLEWOOD, ASSIGNOR TO ALFRED H. ANDREWS,
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MOUNTING TERRESTRIAL GLOBES.

SPECIFICATION forming part of Letters Patent No. 248,259, dated October 11, 1881.

Application filed July 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, HOWARD H. GROSS, residing at Englewood, in the county of Cook and State of Illinois, and a citizen of the United States, have invented new and useful Improvements in Globes, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of a globe embodying my invention; Fig. 2, a side elevation, and Fig. 3 a detached vertical sectional view of the base, standard, and sleeve.

This invention relates to globes which are used for purposes of illustration in geography and astronomy.

The leading object of the invention is to provide a globe much cheaper than those now in use, and simpler in construction, by the use of which can be illustrated the change of seasons, length of day and night, length of twilight, the apparent path of the sun, and similar problems, which I accomplish by providing the vertical standard on which the globe is mounted with a horizon or circle of illumination, permanently secured to a sleeve which rotates on such standard; by connecting a twilight-circle with such circle of illumination; by connecting a suitable rod, ball, or point with such sleeve, adapted and arranged to indicate the position of the sun, and by the use of indicators, all in connection with a globe mounted at the proper angle, as hereinafter more fully set forth.

In the drawings, A represents a suitable base, from which rises a vertical standard, B, to the upper end of which is permanently secured an arm, *a*, upon the outer end of which a globe, C, is mounted, so that it can be rotated on its axis, which axis is permanently secured to the outer end of the arm *a*, and is placed at an angle of about twenty-three and one-half degrees. The base A is divided into twelve parts, corresponding with the months of the year, which are to be suitably marked thereon.

D is a sleeve which rotates upon the standard B.

E is a horizon or circle of illumination, permanently secured to the sleeve D, in effect di-

viding the surface of the globe into two equal parts, the globe being so mounted that its center is directly over the standard B.

F is a twilight-circle, suitably connected to the circle E, and at the proper distance therefrom.

b is an index secured to the sleeve D.

c is a movable pointer pivoted at the north pole of the globe.

d is an arm connected to the sleeve D. Upon the upper end of *d* is a small ball or a point, *e*, to indicate the apparent position of the sun. This ball is so arranged that as the sleeve D revolves on the standard B the ball will pass over the apparent path of the sun. It is not necessary that there should be either a ball or a point at the upper end of the rod or arm *d*. The end of the arm may serve the purpose of an indicator.

The circle of illumination E is, in fact, a day and night circle, as well as a circle of illumination.

In using the globe, if the pointer or index *b* be brought to the latter part of March on the base A the ball or point *e* will be over the equator and the plane of the horizon will pass through both the north and south poles, showing that the days and nights are of the same length in the northern and southern hemispheres. If the sleeve D be rotated on the standard until the index *b* is brought to June, the ball or point *e* will be over the tropic of Cancer and the position of the globe relatively to the horizon will indicate that the south pole is in darkness.

Other illustrations will readily occur to any one accustomed to the use of this class of globes.

The index *b* is not a necessity. A mark or notch on the sleeve could be used instead of such index. The sleeve may be long or short.

The circle E could be so connected with the sleeve D that it could be detached therefrom; but this would add somewhat to the cost without any corresponding advantage.

The day and night circle E, the twilight-circle, the rod or bar *d*, and the index *b* all move together with the sleeve D.

The rod or arm *d* might be secured to the

illuminating-circle at any suitable point, the free end of such rod or arm being located relatively to the other parts, substantially as shown and described.

5 What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The stationary standard B, carrying the swiveled globe, in combination with the sleeve D, surrounding and rotating on the standard, 10 the illumination-circle E, rigidly attached to the sleeve, and the attached rod or arm *d*, curved upward around the globe and arranged to describe the apparent position of the sun on the latter, substantially as described.

15 2. The vertical standard B, carrying the swiveled globe, in combination with the verti-

cal sleeve D, surrounding and rotating on the standard, the two parallel day and night circles E and F, and the attached arm or rod *d*, curved around the globe and moving with the 20 two circles, substantially as described.

3. The combination, with the vertical standard B, carrying the swiveled globe, of the sleeve D, and the attached vertical day and night circles E and F, arranged parallel to 25 each other and moving together with the sleeve, substantially as described.

HOWARD H. GROSS.

Witnesses:

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O. W. BOND.