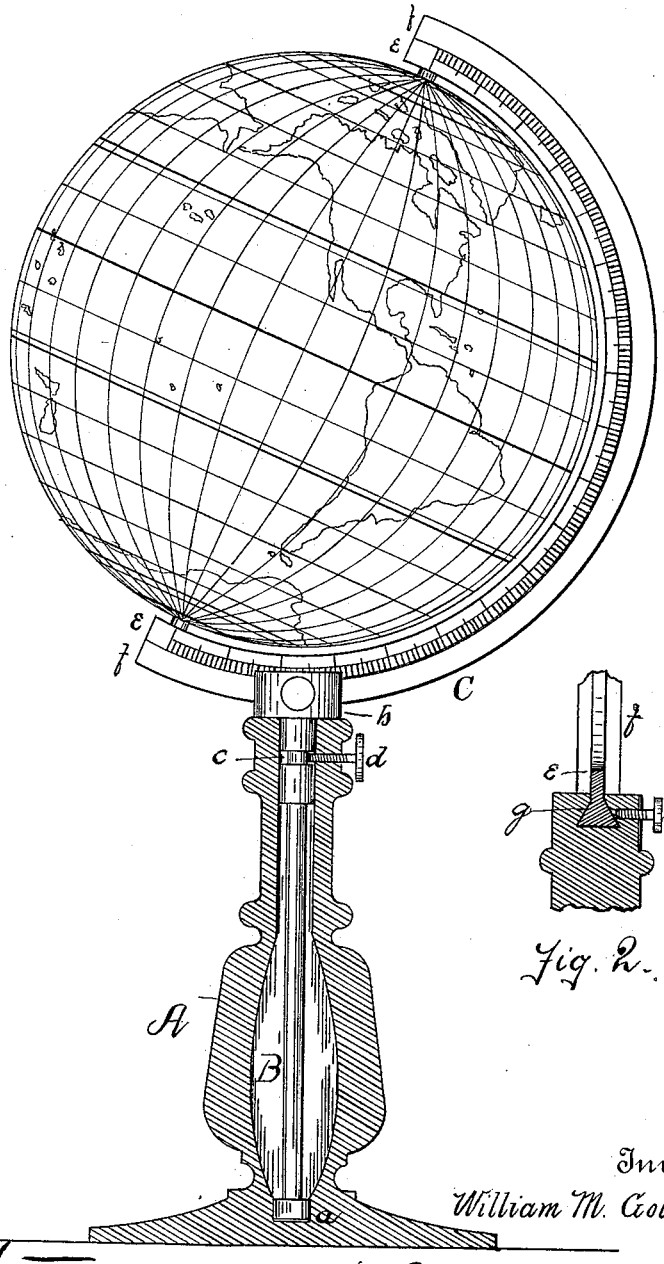
(No Model.)

W. M. GOLDTHWAITE.

GLOBE.

No. 386,399. Patented July 17, 1888.

Fig. 1.



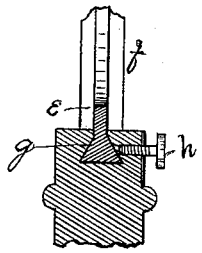


Fig. 2.

Witnesses,

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GLOBE.

SPECIFICATION forming part of Letters Patent No. 386,399, dated July 17, 1888.

Application filed December 1, 1887. Serial No. 256,612. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. GOLDTHWAITE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Globes; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to globes which are mounted upon a single standard by means of a semicircular arm or semi-meridian secured thereto and supporting the axle of the globe itself in bearings at the opposite ends of the arm.

It relates especially to the means employed for mounting the semicircular arm or semi-meridian upon the standard, whereby, first, the globe and arm may rotate upon the standard, and, second, the point of support may be in the line of or at any angle to the axis of rotation of the globe, instead of being fixed at an angle of twenty-three and one-half degrees thereto, as has heretofore been customary.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a globe mounted according to my invention, the standard being shown partly in section; and Fig. 2 is a cross-section of the semicircular arm and the upper end of the standard, showing the manner in which the semicircular arm is mounted therein.

Like letters designate corresponding parts in both of the figures.

In the drawings, A is a standard, which may be permanently fixed to a desk, bookcase, or other convenient stand. The standard is cast hollow, as shown in Fig. 1, and within it turns the rod or post B, upon the upper end of which the semicircular arm C, carrying the globe, is mounted. The rod B extends nearly or quite to the base of the standard, at which point it is set into a socket or step-bearing, *a*, so as to turn freely therein. At the top of the standard the rod also turns freely in bearings, and the end of the rod which projects beyond the end of the standard is enlarged, as shown at *b*, thus forming a head and shoulder resting upon the top of the standard, by means of which the weight of the globe is supported and upon which it turns. The rod B is made smaller throughout the intermediate portion than at the bearing-points at its upper and lower end, in order that there may be as little friction as possible, while the step or socket in which its lower end bears prevents any looseness or rocking. Around the upper part of the rod and a little below the top of the standard a groove, *c*, is formed, and into this groove extends the end of a screw, *d*, mounted in the side of the standard, which holds the rod in place so that it cannot be lifted out without loosening the screw, but still allows the rod to turn freely in the standard. The utility of this portion of the invention will be at once apparent.

Hitherto in globes mounted upon the semi-meridian, which is at once the most simple, useful, ornamental, and economical method, it has been customary to fasten the semi-meridian permanently and rigidly to the standard. By this method it is necessary to have the standard movable upon the desk or other support, thus rendering it liable to be overturned and injured, for if the standard were fixed in position and the semi-meridian rigidly attached to the standard the axis would be fixed and a portion of the globe would be at all times invisible except from a point considerably above or below the ordinary line of vision. On this account, therefore, and by reason of many other disadvantages of illustration in the case of a globe with its axis fixed, it has been customary to mount globes of this class upon a standard of such a character that it could be taken in the hand and turned bodily in order to admit of different positions of the globe for purposes of illustration. By means of this invention the standard may be screwed or otherwise permanently secured to a desk or other convenient support, secure from overturning and consequent injury or destruction, and yet be so movable upon the standard that any portion of its surface can be instantly brought to any convenient point for study or illustration.

The second feature of my invention consists

in making the semicircular arm movable in the standard, whereby the axis of the globe may be set at any desired angle of inclination and adjustable in the required position by means of a set-screw or other similar device. For this purpose the semicircular arm is made with its inner portion flat for graduation, as shown at *e*, while the outer portion is in the form of a flange extending or flaring on both sides in dovetail form in cross-section, as shown in Fig. 2. A groove, *g*, corresponding in form with the flange *f* of the semicircular arm, is formed across the top of the rod B, and into this the dovetail flange portion of the arm fits so as to slide easily. A set-screw, *h*, is set in the top of the rod B at right angles to the direction of the groove, by means of which the semicircular arm may be secured in any desired position. By means of this adjustment a great variety of features may be illustrated by setting the globe at various angles to its axis of rotation—as, for instance, for illustrating the results that would follow if the axis of the earth were at any other angle to the plane of the ecliptic, as if the ecliptic and the equator were in the same plane, or if they were at right angles to each other or at any greater or less angle than at present, or if either of the poles were constantly turned toward the sun. In the same manner the globe can be readily so turned as to show at a glance the preponderance of land in the northern hemisphere, and of water in the southern, and a variety of other points that need not be mentioned.

By means of the two features illustrated in this invention any point upon the surface of the globe can be instantly brought within easy vision from any position, and all the advantages of a "full-mounted" globe obtained with much less expense, while the mounting is less cumbersome and affords less obstruction to the vision, and is easily adjustable.

This invention adds but a trifle to the cost of construction, while it more than doubles the utility and convenience of the globe for purposes of study and illustration.

I claim as my invention—

1. The combination, with a globe, of a semicircular arm upon the opposite ends of which the axis of the globe is rotatively mounted, an upright hollow standard having inside bearings at the upper and lower extremities thereof, a rod or post, B, rotatively mounted in said bearings and having a head, *b*, to which the said semicircular arm is attached, resting normally upon the upper end of the standard, a groove, *c*, formed around the upper bearing-surface of the rod, and a set-screw, *d*, mounted in the standard opposite to and entering within the groove, substantially as and for the purpose herein specified.

2. The combination, with a globe, of an upright hollow standard, an upright rod rotatively mounted in inside bearings at the top and bottom thereof, and having a head extending above and resting upon the upper end surface of the standard, a dovetail-shaped groove formed across the top of the head of the rod, and a semicircular arm between the opposite ends of which the axis of the globe is mounted, the outer semi-circumference of said arm forming a flange of dovetail shape to correspond with said groove, substantially as and for the purpose herein specified.

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

WILLIAM M. GOLDTHWAITE.

Witnesses:

J. B. HARTSINCK,

F. W. LANE.