

No. 625,881.

Patented May 30, 1899.

J. H. GERWIG.
EDUCATIONAL DEVICE.

(Application filed Mar. 9, 1899.)

(No Model.)

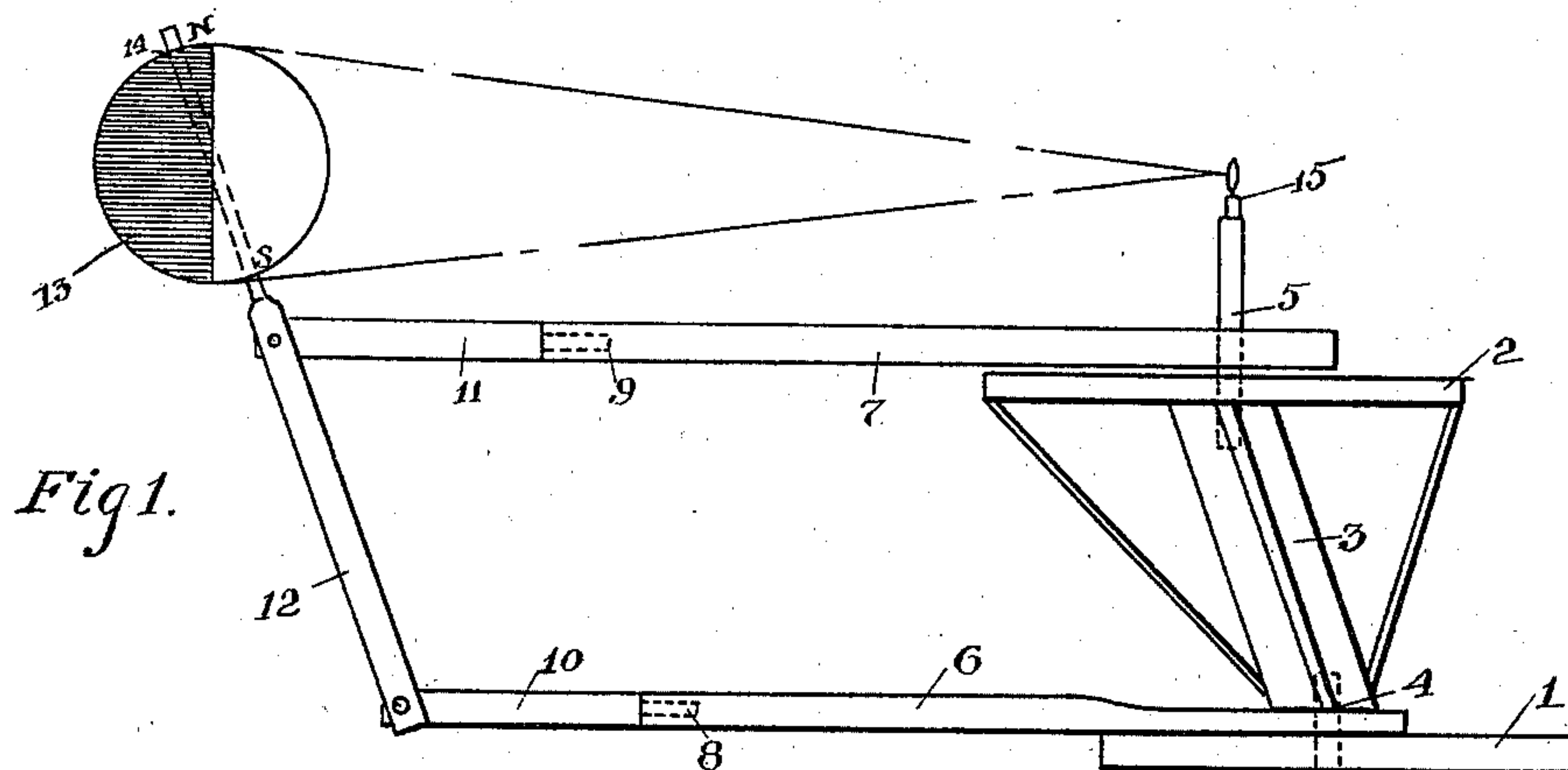


Fig 1.

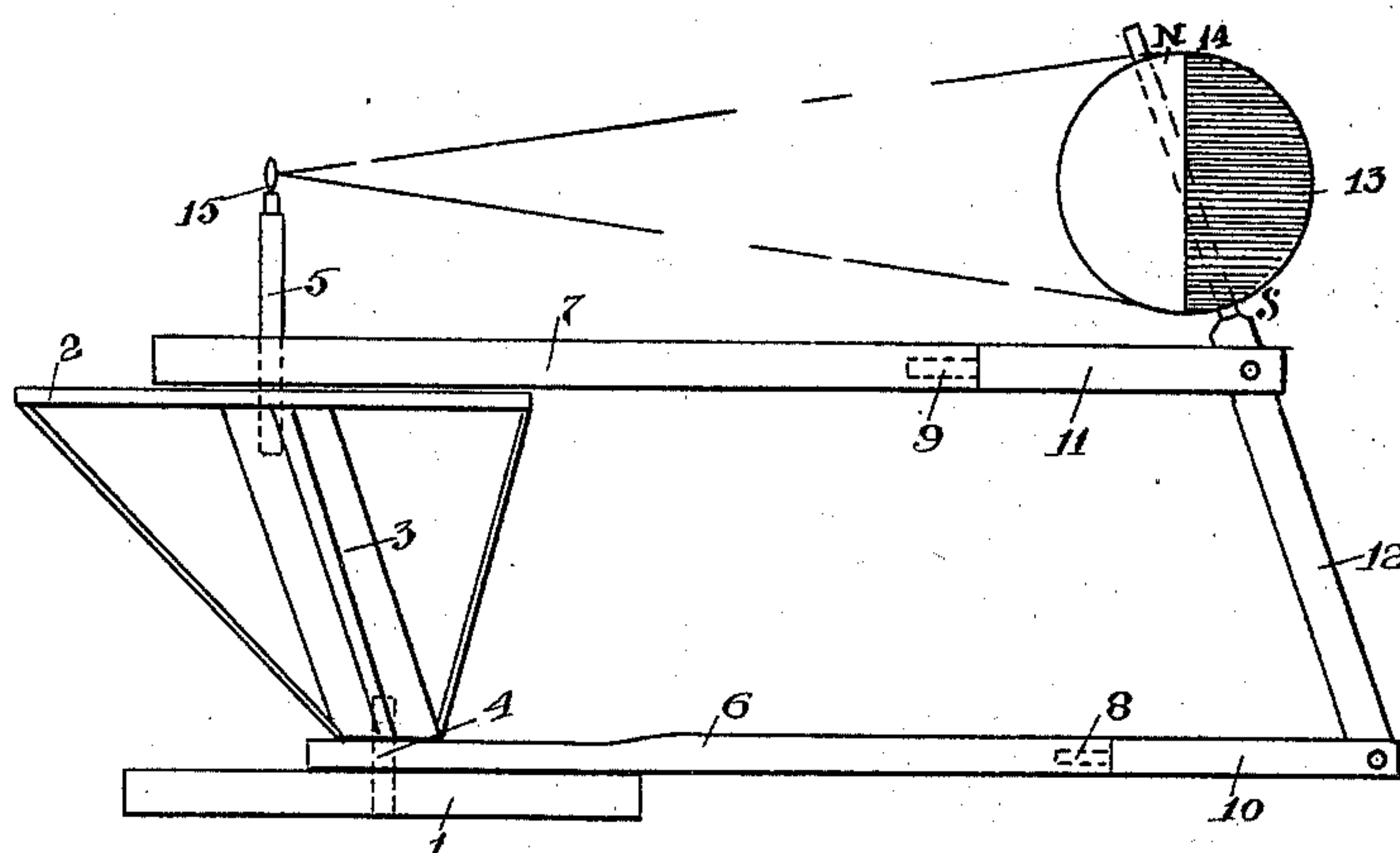


Fig 2.

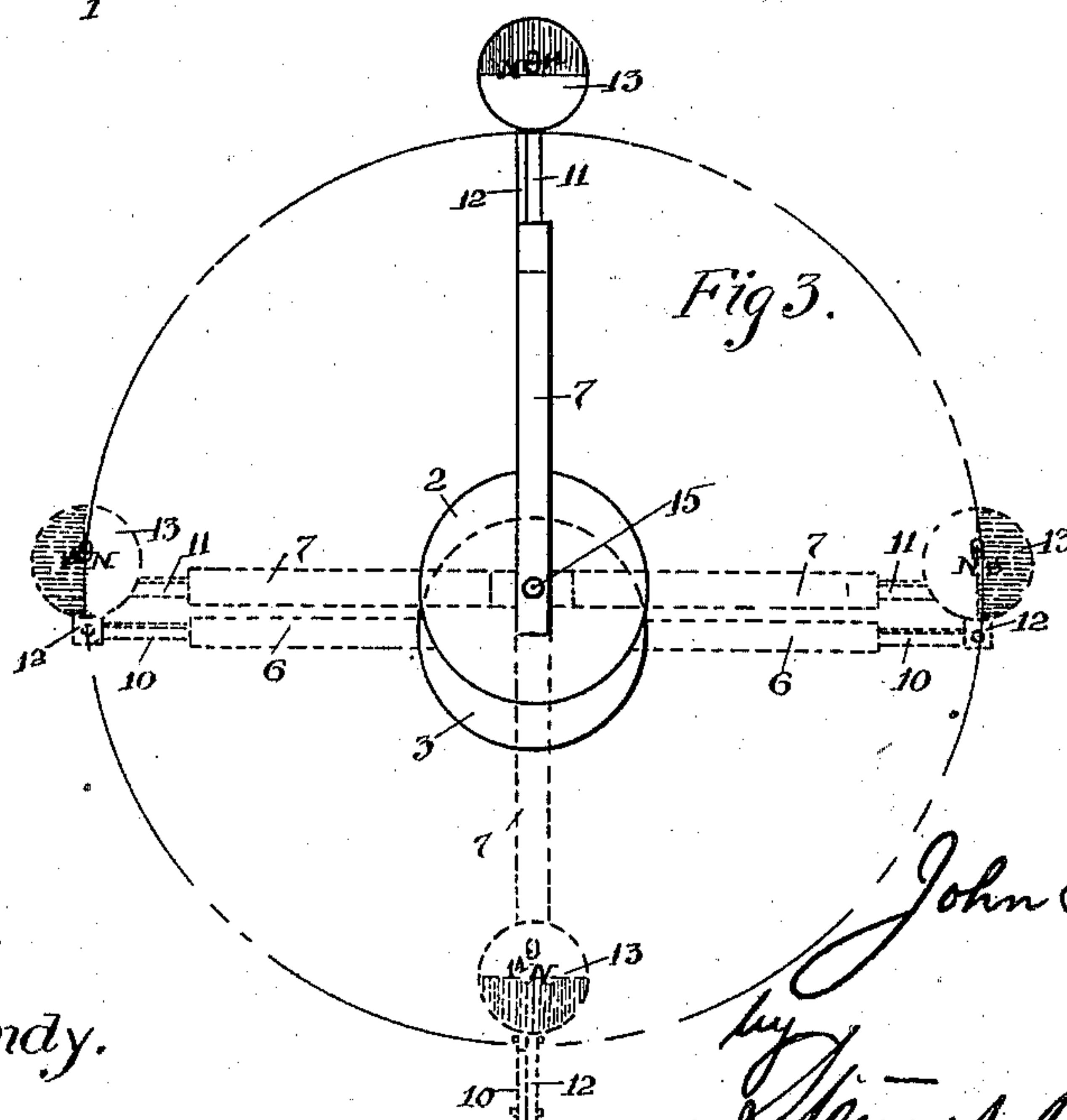


Fig 3.

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UNITED STATES PATENT OFFICE.

JOHN H. GERWIG, OF CATONSVILLE, MARYLAND.

EDUCATIONAL DEVICE.

SPECIFICATION forming part of Letters Patent No. 625,881, dated May 30, 1899.

Application filed March 9, 1899. Serial No. 708,442. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GERWIG, a citizen of the United States of America, and a resident of Catonsville, Baltimore county, in the State of Maryland, have invented certain new and useful Improvements in Educational Devices, of which the following is a specification.

My invention relates to an educational device designed to teach the revolution of the earth in its orbit around the sun and its position in relation to the sun at varying seasons, which produces the change of season and the varying length of day and night.

In the drawings, Figure 1 is a side elevation of my device showing the earth in the winter solstice. Fig. 2 is a side elevation of the device showing the earth in the summer solstice. Fig. 3 is a plan showing the four positions of the earth in relation to the sun—when days are shortest and nights longest in northern hemisphere, when days are longest and nights shortest in the southern hemisphere, and when both are equal in spring and fall.

My device is not quite accurate in that the variation of distance of the earth from the sun in its two extreme positions is much too great in proportion; but this inaccuracy does not interfere with the illustration of the revolution of the earth in its orbit and the maintenance of its relation to the sun, the angle of the axis being constant.

In the drawings, 1 and 2 are two disks mounted rigidly and parallel to one another on each end of an inclined post 3, which has the same angle of inclination as the earth's axis. At the lower end of the post 3 is a vertical portion 4, which serves as a pin upon which is pivoted the bar 6.

6 and 7 are two bars of equal length, 6 journaled on 4 and 7 on a pin 5, which is in the center of the disk 2. The bars 6 and 7 are each provided with a round axial hole in their ends 8 and 9. 10 and 11 are two bars of equal length and each provided on its end with a circular section which enters and turns in the holes 8 and 9.

12 is a connecting-bar pinned to the ends of the bars 10 and 11, hence having the same in-

clination as the post 3 and the earth's axis. 50
On the upper end of the bar 12 is pivoted a globe 13.

15 is a candle or other light by which the illumination of the earth's surface may be illustrated. 55

As the earth is rotated around the sun its axis will always maintain the same inclination, and it may be rotated upon its axis to illustrate day and night. The inclination of the post 3 and the eccentric position of the pivots 4 and 5 of the bars 6 and 7 will cause the bar 12 to maintain a constant inclination as the globe revolves around the point of light. Hence the bars 10 and 11 must oscillate in the holes 8 and 9. When the parallel rods, including the bars 10 and 11, are in the position of the winter or summer solstice, they are in the same vertical plane with the inclined post on which they turn, and in their movement swinging in a circle about the post they swerve from said position, the bars 10 and 11 oscillating in the holes 8 and 9, so as to keep the outer connecting-bar at the same inclination as the post on which the rods revolve, this swerving of the parallel rods bringing them into the position shown in dotted lines midway between the winter and summer solstice or out of their vertical plane, as aforesaid, as indicated in dotted lines in Fig. 3. 65 70 75

It will be seen that when the globe is in position of Fig. 1 the north pole 14 will always be in darkness and the south pole in light, when in position of Fig. 2 the north pole will always be in light, (constant day,) and at the intermediate positions both poles will be in light and days and nights will be of equal length. 80 85

The structure of my device may be varied at pleasure without departing from my invention, which consists of two bars of equal length pivoted eccentrically on a line parallel to the earth's axis and connected together at their ends by a bar parallel to the earth's axis, a globe upon the end of the inclined bar, and means to permit the horizontal bars when turning on their pivots to rotate at their ends axially. 90 95

Having thus described my invention, what I claim is—

In an educational device the combination of a post inclined in position parallel to the earth's axis, a bar of equal length pivoted upon each end of the inclined post, extensions
5 of equal length fitted to the outer ends of the said bars and adapted to permit axial oscillation, a connecting-bar secured to the outer ends of the extensions and parallel to the in-

clined post, and a globe mounted upon the upper end of the inclined connecting-bar. 10

Signed by me, at Baltimore city, State of Maryland, this 4th day of March, 1899.

JOHN H. GERWIG.

Witnesses:

CHARLES H. MILLIKIN,
E. W. CODY.