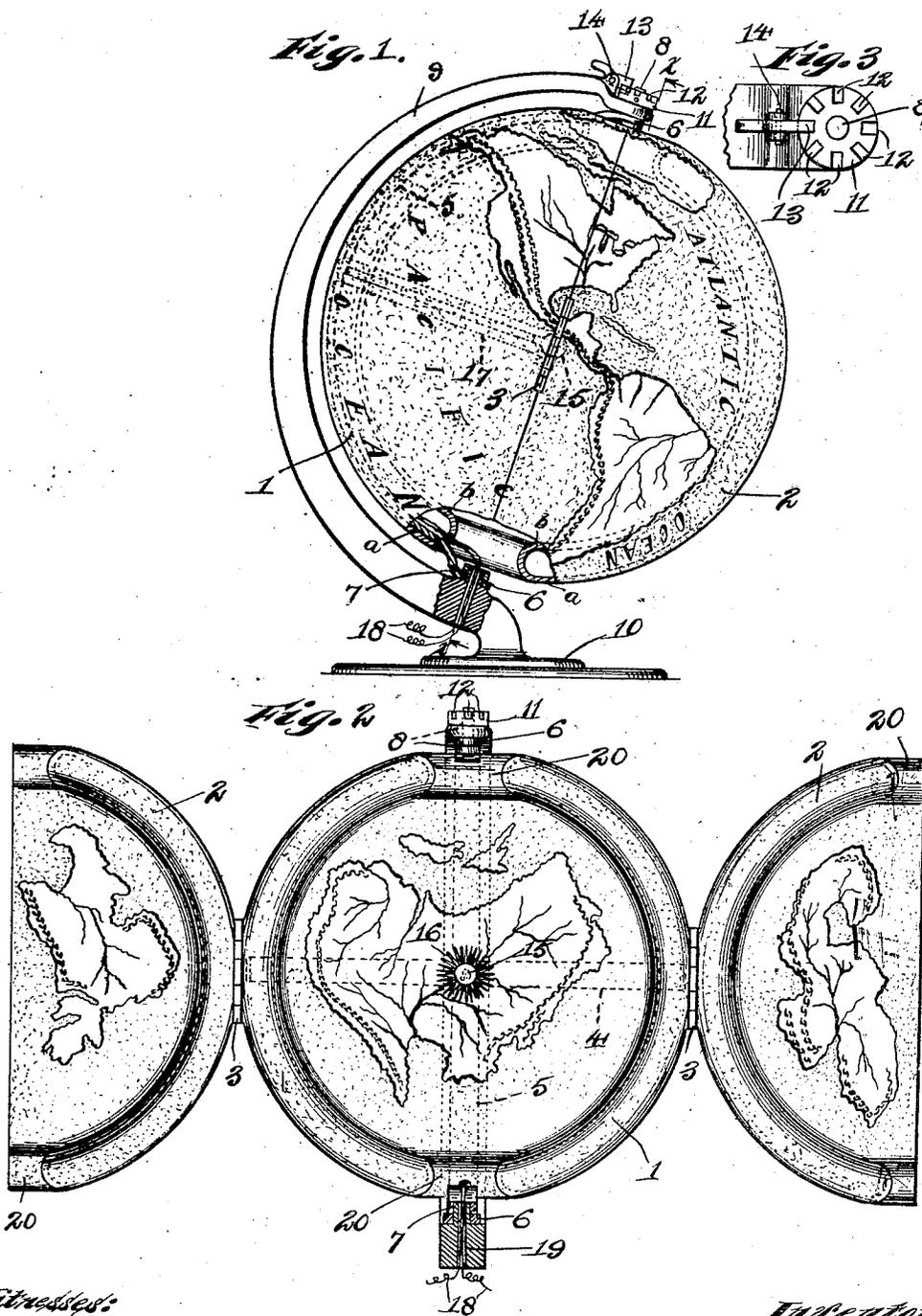


M. B. GARDNER.  
 GEOGRAPHICAL APPARATUS.  
 APPLICATION FILED NOV. 25, 1912.

1,096,102.

Patented May 12, 1914.



Witnessed:  
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 his Attorney.

# UNITED STATES PATENT OFFICE.

MARSHALL B. GARDNER, OF AURORA, ILLINOIS.

## GEOGRAPHICAL APPARATUS.

1,096,102.

Specification of Letters Patent. Patented May 12, 1914.

Application filed November 25, 1912. Serial No. 733,425.

To all whom it may concern:

Be it known that I, MARSHALL B. GARDNER, a citizen of the United States, and a resident of the city of Aurora, county of Kane, and State of Illinois, have invented certain new and useful Improvements in Geographical Apparatus, of which the following is a specification.

My invention relates to geographical apparatus, that is to apparatus designed for use in the study of geography.

The object of my invention is the production of a device of the character mentioned through the medium of which the geography of the globe or earth may be studied with greater facility and ease.

A further object is the production of a device as mentioned, which will be of durable and economical construction and efficient in use.

Other objects will appear hereinafter.

My invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which,

Figure 1 is a partially sectional side elevation of a device embodying my invention, the sectional globe included therein being shown in closed position, Fig. 2 is a section taken on substantially line  $x-x$  of Fig. 1, with the globe sections in open position, and Fig. 3 is an enlarged fragmentary detail of one of the bearings for the globe.

The preferred form of construction as illustrated in the drawing comprises a hollow globe consisting of a main section 1 hemispherical in form and two supplemental sections 2 quadrant in form, the sections 2 being secured to section 1 by hinges 3 which permit of the sections 2 being swung to open position, as clearly shown in Fig. 2, in order to expose the inner surface of the globe. Each of said sections 1 and 2 is formed preferably of two concentric layers  $a$  and  $b$  of sheet metal which are spaced apart so as to increase the thickness of said sections in order to represent more nearly the comparative thickness of the crust of the earth in accordance with the geographical theory of the inventor. Upon the outer surface of the globe are the usual geographical indications or maps illustrating or indicating the continents of the world. Upon

the inner surface of the globe are also arranged geographical indications illustrating continents which according to the theory of the inventor exist upon the inner surface of the globe.

The section 1 is reinforced by metallic bands 4 and 5 arranged therein, between the layers  $a$  and  $b$  and rigidly secured to the former, as clearly shown in Figs. 1 and 2, the extremities of band 4 terminating at the hinges 3 in order to reinforce the section 1 at these points. The respective extremities 6 of the other of said bands project exteriorly, terminating at diametrically opposite points of the globe to serve as bearings in the rotatable mounting of said globe between gudgeons 7 and 8 which are provided in the semi-circular support 9. The support 9 is provided with a suitable base 10. The gudgeon 7 is formed integral with the support 9 and is stationary, the bearing 6 rotatably embracing the same. The gudgeon 8 is rotatably mounted in the support 9, the inner end thereof being fixed to the bearing 6 so that said gudgeon will rotate in unison with the globe. Secured to the outer end of said gudgeon 8 is a notched disk 11 with which cooperates a dog 13 pivoted at 14, said dog being adapted for engagement with the notches 12 of disk 11 to releasably lock the globe in positions of rotatable adjustment. The arrangement is such, as will be observed, that release of the globe to permit of rotatable adjustment thereof is effected by depressing the rearward end of dog 13 in order to disengage the opposite end thereof from the notches 12.

Arranged centrally within the globe is an illuminant 15, preferably an electric light bulb around which is arranged the corona 16. The lamp bulb 15 is mounted at the inner end of an arm 17 which is secured rigidly at its opposite end to the globe section 1. The arm 17 is hollow to permit of the passage of the conductor wires 18 for the lamp bulb 15, said wires passing from arm 17 through the hollow wall of section 1 and downwardly through passage 19 formed at the lower end of support 9, as clearly shown in Figs. 1 and 2. The arrangement of the illuminant as designed is in accordance with the inventor's theory as to the interior formation and arrangement of the earth. Provided at diametrically opposite points in the globe at the terminals of the axis about which the same is mounted to rotate are

openings 20 which also constitute one of the features of the inventor's theory of the earth's construction.

A device of the construction set forth is durable and economical in construction, the arrangement is such that the sectional globe is capable of ready rotary adjustment such as is desired in using the same, and the sections of the globe are so connected as to be adapted for ready swinging to open position in order to expose the interior of the globe.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. A device of the class described comprising a hollow globe consisting of a plurality of hingedly connected sections each formed of two spaced layers; reinforcing

bands secured to one of said sections and arranged between the layers thereof, the respective ends of one of said bands projecting exteriorly at diametrically opposite sides of said globe; and a support with which said band ends engage for pivotally supporting said globe, substantially as described.

2. A device of the class described comprising a hollow globe consisting of a plurality of hingedly connected sections each formed of two spaced layers; reinforcing bands secured to one of said sections and arranged between the layers thereof, the respective ends of one of said bands projecting exteriorly at diametrically opposite sides of said globe, the respective extremities of the other of said bands terminating at the hinge connections between said sections; and a support with which said exteriorly projecting band ends engage for pivotally supporting said globe, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARSHALL B. GARDNER.

Witnesses:

A. A. OLSON,  
JOSHUA R. II. POTTS.