E. M. WALTERS.

RUBBER GLOBE.

APPLICATION FILED NOV. 1, 1920.

1,422,642.

Patented July 11, 1922.

2 SHEETS—SHEET 1.

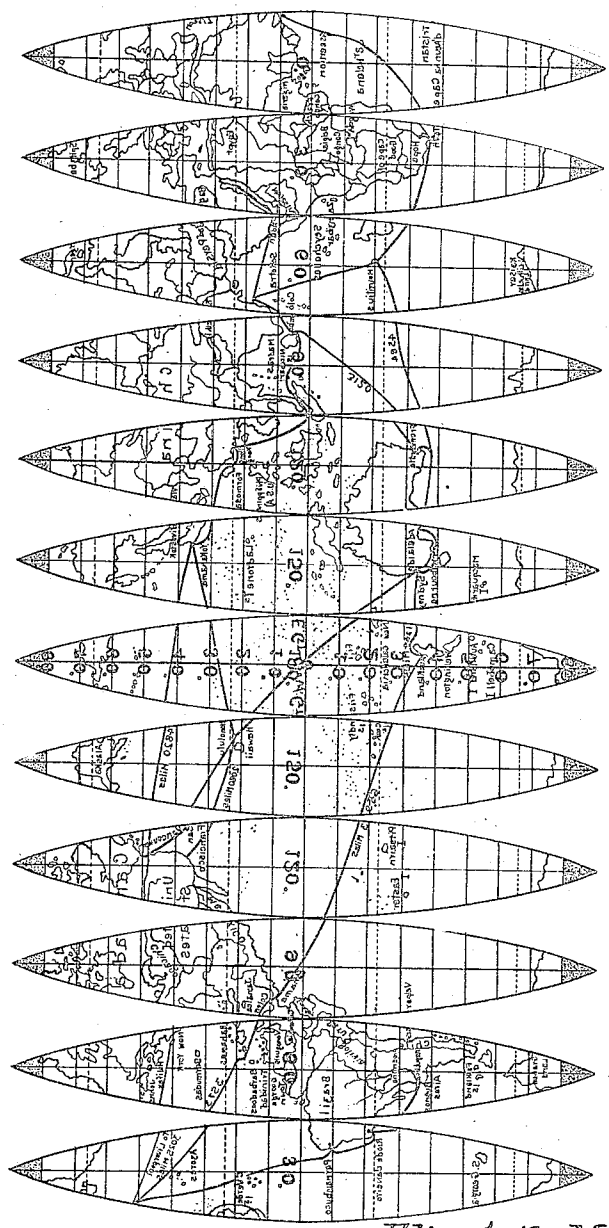


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

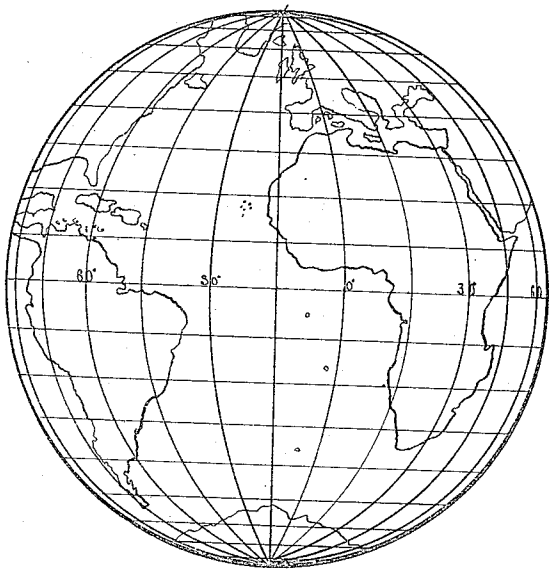


Fig. 4.

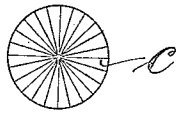
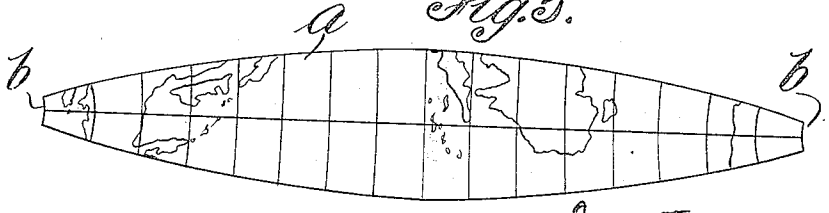


Fig. 3.



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UNITED STATES PATENT OFFICE.

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RUBBER GLOBE.

1,422,642. Specification of Letters Patent. Patented July 11, 1922.

Application filed November 1, 1920. Serial No. 421,151.

To all whom it may concern:

Be it known that I, ELIZABETH MARY WALTERS, a subject of the King of England, residing at Hove, in the county of Sussex, England, have invented certain new and useful Improvements in Rubber Globes; and I do hereby 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.

This invention relates to an educational toy, especially suitable for use in schools for instructing junior pupils in geography, astronomy and the like.

The invention consists essentially in providing a rubber globe or ball of the kind generally used as a plaything by children and in producing on the surface of the said globe, a map, which in the case of the terrestial globe may show political divisions, physical data and surface features, rainfall, natural regions, animal distribution or the like; suitable markings for indicating lines of latitude and longitude, the equator, the polar circles &c, being added when required.

In the case of the terrestial globe, the constellations may be produced on its surface.

In the general way of carrying the invention into effect, a smooth rubber ball of the required size is provided, which is treated upon its surface, so as to render it suitable for the reception of a black or coloured lithographic transfer, which is of suitable shape to be applied conveniently to the surface of the globe. The required marking are provided upon the transfer and when the transfer is applied to the outer surface of the globe, these markings are suitably reproduced upon the prepared surface.

After the transfer has been removed, the surface of the globe is varnished with a high glazed flexible varnish to protect it and to make the reproductions more permanent.

In order that the invention may be readily understood reference is made to the accompanying drawings, in which:—

Fig. 1 is a view showing the shaped gores forming the transfers for producing the lines upon the rubber ball.

Fig. 2 shows the ball with the lines transferred thereon.

Fig. 3 shows a modified form of gore in which the polar ends are cut away, and,

Fig. 4 is a view of one of the polar caps employed when gores according to Fig. 3 are used.

In the preferred method of carrying the invention into effect I divide the sphere of the terrestial globe into a number of lunes, extending from pole to pole, and I produce the political or other markings required in the proper positions and suitably shaped gores of paper or the like *a*, Fig. 1 corresponding with these lunes, so as to form a lithographic transfer. These paper gores are applied to the surface of the rubber globe all round the same, so that they may meet at the poles and come into contact at the edges, and in this way the image on the gores is transferred to the surface of the globe and when the paper is removed it is simply necessary to varnish the surface of the globe which is then ready for use.

The gores *a* are twelve in number, each of them corresponding to a lune of the terrestrial globe having an angle of 30 degrees.

The drawing represents the transfer ready to be applied to the outside of the globe. It will be seen that the gores meet at the equator and that when the paper is cut away along the outline of the gores and the transfer is placed round the globe, the gores can be folded over so as to come into contact with one another along the edges and to meet at the poles, thus producing upon the surface of the rubber globe see Fig. 3 a sufficiently correct reproduction of the political markings, contours of the land, lines of latitude and longitude and the like to meet the purposes required.

In some cases in place of providing gores which extend to the poles, I may cut away the points at a distance, for instance of 10 or 20 degrees from the pole as shown at *b* in Fig. 3, and in that case I provide two polar caps *c* Fig. 4, extending for a distance of 10 or 20 degrees from the pole as the case may be and reproduce the markings in this polar area upon a separate transfer.

The transfers for the polar caps *c* may take the form of discs provided with the necessary markings, such discs being applied to the outer surface of the ball after the gores have been placed in position: and in some cases the discs may be provided with slots or cut away portions, in order to facilitate transferring the markings to the surface of the sphere.

The surface is finally varnished, as previously stated.

It will be evident that the particular methods of shaping the paper transfer may be varied in practice, but the one just described and illustrated on the drawing possesses particular advantages.

What I claim and desire to secure by Letters Patent of the United States of America is:—

1. The method of producing a rubber globe for use as an educational toy, consisting in the employment of a hollow air filled rubber ball, the surface of which is divided into a number of lunes, extending from pole to pole, the markings being produced by lithographic transfers in the form of paper gores corresponding to the shape of the lunes, the paper only being afterwards removed.

2. The method of producing a rubber globe for use as an educational toy, consisting in the employment of a hollow air filled closed rubber ball, the surface of which is cleaned for the reception of a lithographic transfer, the transfer being in the form of paper gores each corresponding with a lune extending from pole to pole of the globe, transferring the printed matter from said gores to the surface of the ball in the proper positions, removing the paper gores and applying a coating of protective varnish to said ball, for the purposes set forth.

3. The method of producing a rubber globe for use as an educational toy, consisting in the employment of an air filled closed rubber ball, applying the markings thereto by means of lithographic transfers, the transfers being formed of paper gores each corresponding in shape and dimensions to lunes extending around the globe from points adjacent each pole, applying separate transfers in the form of polar caps to the two poles on the globe, the periphery of the caps co-inciding with the ends of the lunes for the purposes set forth.

ELIZABETH MARY WALTERS.