June 12, 1945. R. VON SIEGL 2,378,115

GLOBE CONSTRUCTION

Filed Nov. 8, 1943 4 Sheets-Sheet 1

Fig. 1.

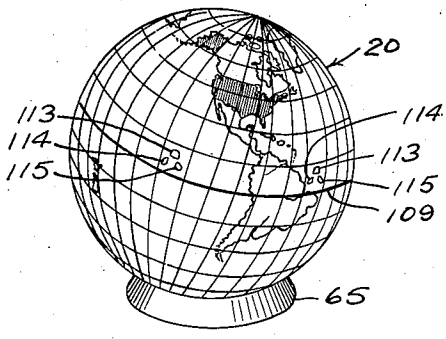


Fig. 16.

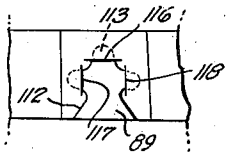
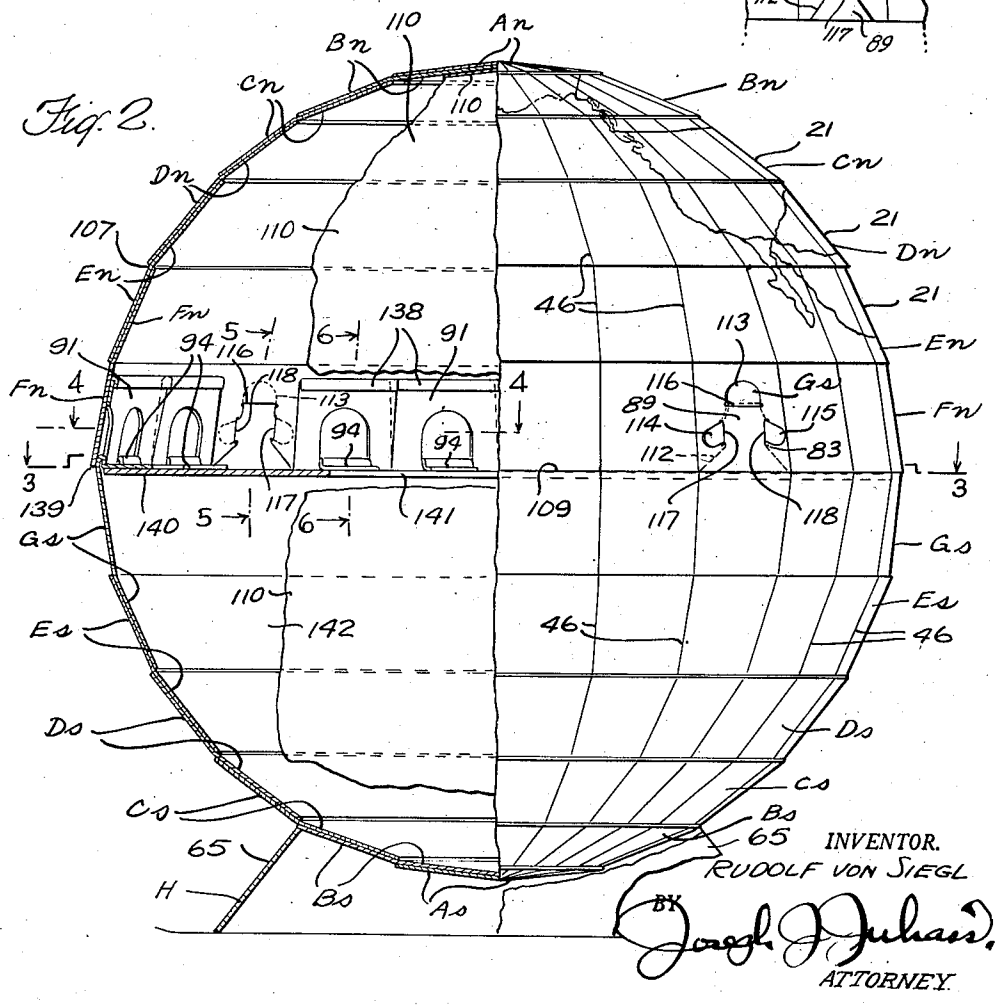


Fig. 2.



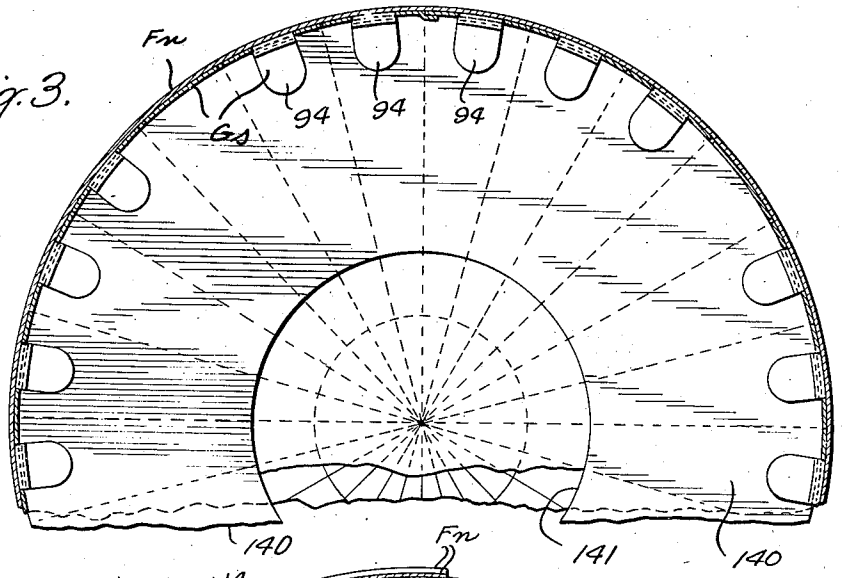
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GLOBE CONSTRUCTION

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Fig. 3.



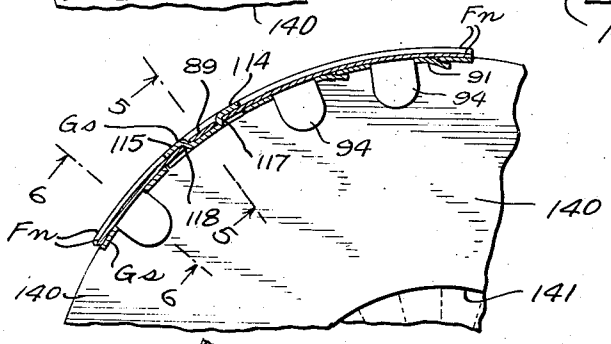
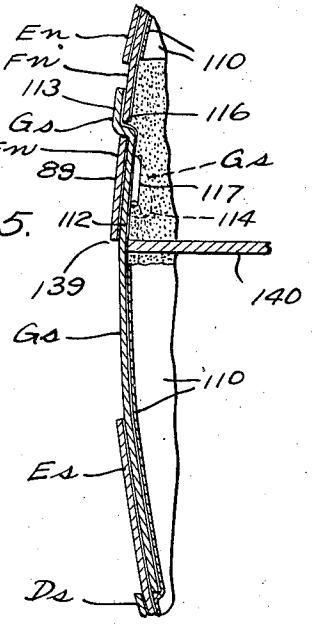


Fig. 4.

Fig. 5.



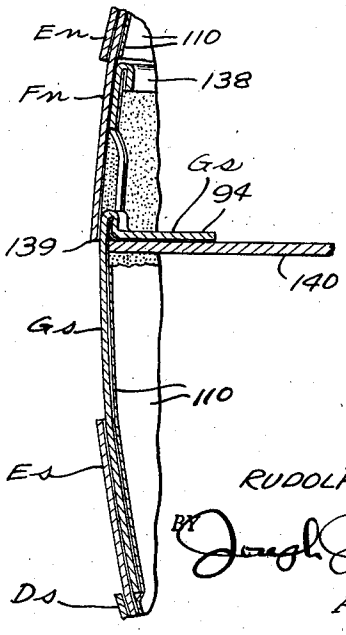


Fig. 6.

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GLOBE CONSTRUCTION

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Fig. 7.

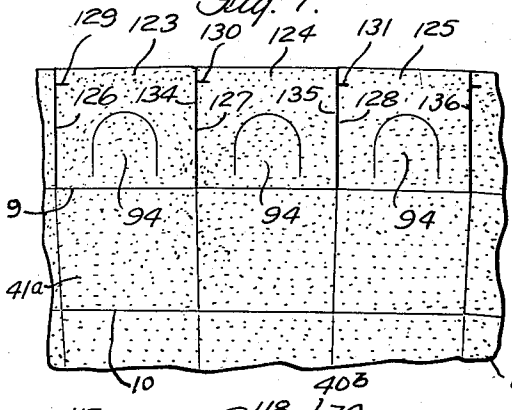


Fig. 8.

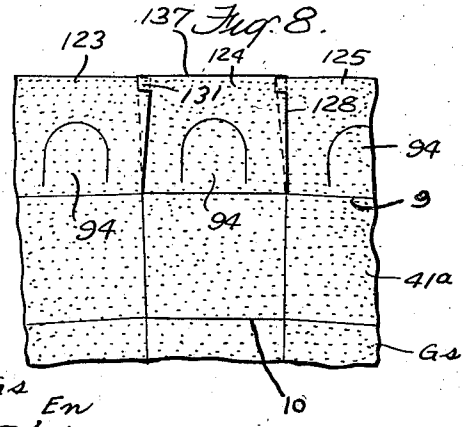


Fig. 14

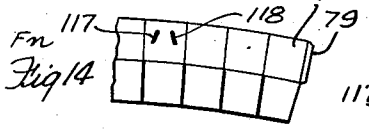


Fig. 12.

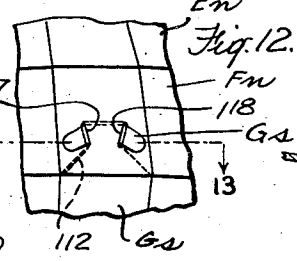


Fig. 13

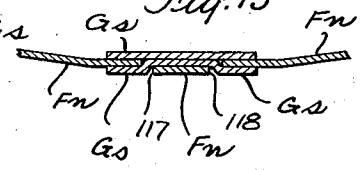


Fig. 15

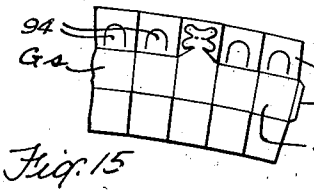


Fig. 10.

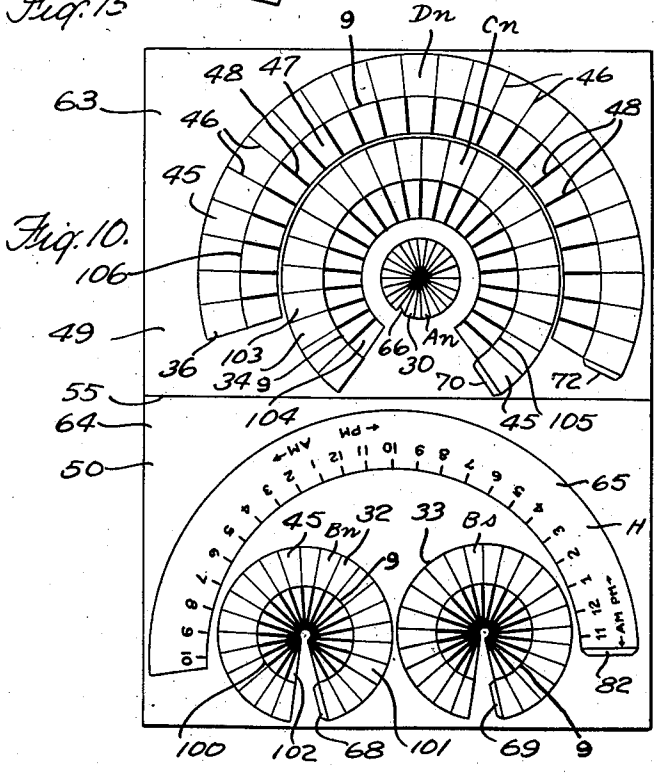
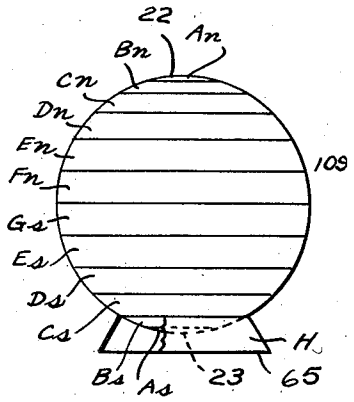


Fig. 9.



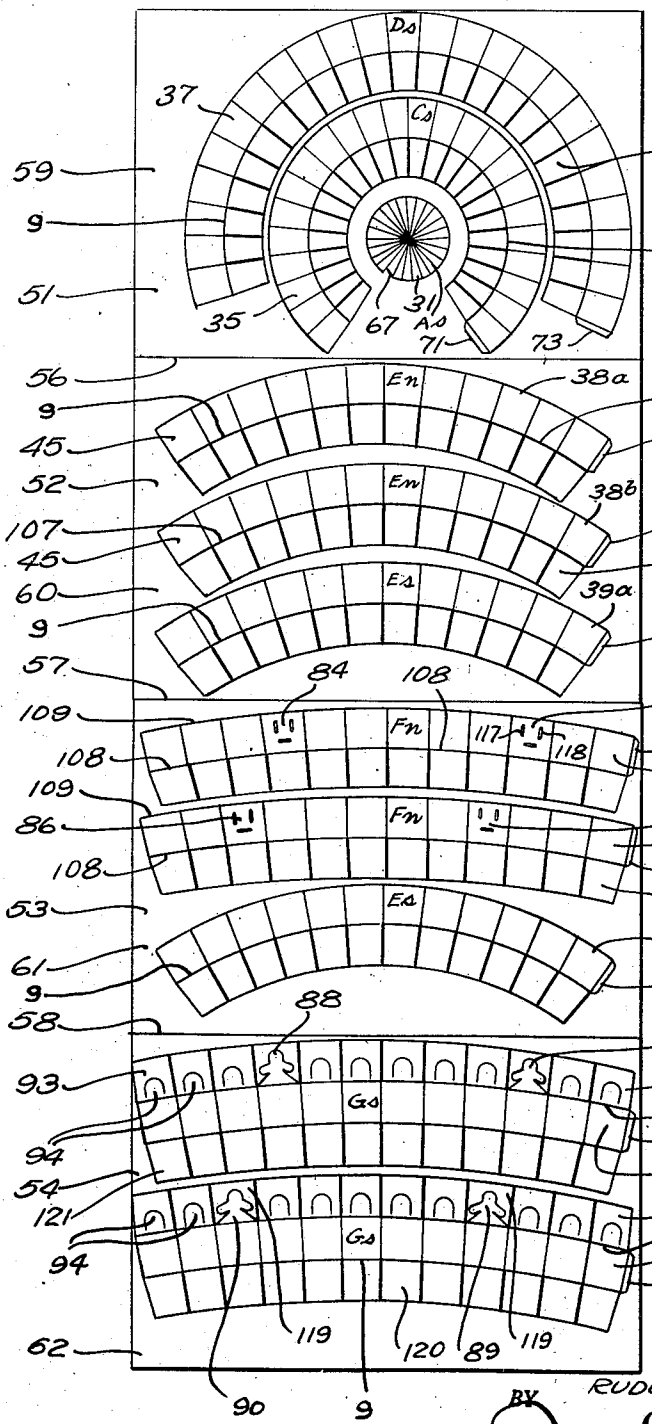
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GLOBE CONSTRUCTION

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Fig. 11.



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Patented June 12, 1945 2,378,115

UNITED STATES PATENT OFFICE

2,378,115

GLOBE CONSTRUCTION

Rudolf von Siegl, New York, N. Y.

Application November 8, 1943, Serial No. 509,457

11 Claims. (Cl. 35—46)

This invention relates generally to earth globes and more particularly to a novel and useful earth globe construction which may be fabricated and sold in knocked-down or flat condition and may be readily assembled by lay persons having no special skill.

Earth globes composed of a sphere upon the outer surface of which a true map of the earth's surface is placed are well known, and their use has become of increased importance in view of the use of the aeroplane as a means of travel between relatively distant points upon the globe. It is by use of earth globes that true directions and shortest distance straight line itineraries are laid out and flying times are computed. The earth globe has also increased in use owing to the increased intercourse between various nations and geographical areas by reason of improved conditions of transportation and communication.

One of tne principal objections to prior art structures of this character lies in the fact that they are, if accurate, expensive to construct, and ship, and take considerable space in storage. In accordance with the present invention the various elements which go to make up the completed earth globe are fabricated on flat sheets of material and may in that condition be easily transported. Furthermore, in a flattened condition they take very little space in storage.

Among the objects of the present invention lies the provision of earth globe structure which may be readily assembled by the user, even though he have no special skill, and such assembly requires no special tools or materials, the sole requirement being a source of solvent for the particular adhesive incorporated with the sheets from which the globe is subsequently formed.

Another object herein lies in the provision of a novel support or base upon which the completed earth globe is satisfactorily mounted, and upon which it may be moved in any desired direction to place before the viewer that portion of the globe in which he is at that time interested.

A further object herein lies in the provision of earth globe structure composed of a plurality of parts certain of which during assembly are relatively permanently interconnected and others which are but relatively temporarily connected. By virtue of such structure, it becomes possible after the globe has had a period of use to partially disassemble the same and to nest one hemisphere within the other so that the globe may be stored and occupy a reduced amount of space as compared with usual globe structures.

An advantage of the present structure lies in the fact that relatively large size earth globes may be constructed, and yet such globes will be of relatively light weight so that in spite of their bulk necessary for clarity of detail, they are nevertheless wieldy.

An object herein lies in the provision of novel earth globe structure which is only substantially spherical and as a matter of fact is composed of a multiplicity of interrelated facets and in which the borders or margins of the facets are correlated to the lines of longitude and latitude on the globe so that the distortion within a given facet by virtue of the non-spherical external configuration thereof is of relatively low order.

An object of the invention lies in the provision of an easily assembled earth globe, the components of which are composed of relatively inexpensive material so that the same may have a wide distribution and use. Thus, globes constructed in accordance with my invention may be distributed by governments for the creation of good will or for educational purposes, as by distribution to small schools in neighboring and occupied countries (where the usual type of globe would be difficult to transport or expensive to use). Globes as here disclosed may be used for other educational purposes, as for example, geography lessons in school, wherein the subject may be made more interesting by the actual assembly of the globes by the students. My invention may also be used to advantage for advertising purposes, since by virtue of the low cost thereof distribution could be correspondingly increased. Such globes may show global distribution of industries, economic conditions and location of raw materials or manufacturing facilities, etc.

These objects and other incidental ends and advantages will more fully appear in the progress of this disclosure and be pointed out in the appended claims.

In the drawings, in which similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a view in perspective showing an earth globe disposed within a standard or base, and supported thereby.

Figure 2 is an enlarged fragmentary front elevational view of the structure shown in Figure 1, certain of the parts being shown in section and others broken away for the purpose of clarity.

Figure 3 is a fragmentary horizontal sectional view as seen from the plane 3—3 on Figure 2.

Figure 4 is a fragmentary horizontal sectional view as seen from the plane 4—4 on Figure 2.

Figure 5 is an enlarged fragmentary vertical sectional view as seen from the plane 5—5 on Figure 2.

Figure 6 is a view taken similarly to Figure 5 but from the plane 6—6 on Figure 2.

Figure 7 is a fragmentary detail elevational view showing the upper edge of the lower half of the globe prior to the lapping or shaping operation.

Figure 8 is a fragmentary detail elevational view showing the upper edge of the lower half of the globe subsequent to the lapping or shaping operation.

Figure 9 is a fragmentary elevational view of the globe and base, schematic in nature.

Figure 10 is a plan view of a sheet of material containing certain of the global elements as prepared in flat form and prior to separation and assembly.

Figure 11 is a view corresponding to Figure 10 and showing the sheet material including the remaining global elements necessary to complete the entire structure.

Figure 12 is a fragmentary elevational view showing an alternate form of connection between the lower and upper hemispheres of the globe.

Figure 13 is an enlarged fragmentary horizontal sectional view as seen from plane 13—13 on Figure 12.

Figure 14 is a fragmentary elevational view of the lower portion or edge of the upper hemisphere in accordance with the construction shown in Figure 12.

Figure 15 is a view corresponding to Figure 14 but shows the upper edge of the lower hemisphere in accordance with the construction shown in Figure 12.

Fig. 16 is a detail view showing the manner in which the hook tabs may be disposed on the outside of the globe and have their tips inserted inwardly through the slits provided for them.

Turning now to the preferred embodiment of invention illustrated in Figures 1 to 11 inclusive, it may be seen that the globe generally indicated by reference character 20 is formed by the integration of a plurality of globe forming elements generally indicated by numeral 21. As seen in Figure 9, the globe forming elements are arranged in horizontally stepped relation to form horizontally arranged zones in the Northern hemisphere designated by the reference characters A*n*, B*n*, C*n*, D*n*, E*n*, F*n*; and in the Southern hemisphere by reference characters A*s*, B*s*, C*s*, D*s*, E*s*, G*s*. The base zone as viewed on said figure is indicated by reference character H.

Upon perusal of Figure 9 it will be noted that there are 12 zones in all disposed between the North Pole 22 and the South Pole 23. Thus, each of the zones may occupy 15° latitude. Each of the zones described is formed from a piece of planar material which includes a development of the surface disposed within the particular zone. Thus, the surface of the globe 20 within any given zone may be composed of a single piece of planar material, as for example, the element 32 in Figure 10. For the purpose of reducing the size of the printing sheet so that the globe in its disassembled state may occupy a more compact space the longer globe forming elements, as for example, the globe forming element 38, may be divided into two portions, 38*a* and 38*b*.

In order to facilitate the assembly of the globe and to provide the substantially planar surfaces for the interconnection of the globe forming elements, the relatively visible portions generally indicated by reference character 45 are provided with a plurality of scores 46 and the relatively concealed portions 47 are provided with a plurality of notches, indentations or slits 48. The globe forming elements 30 and 31 do not have relatively concealed portions which are comparable to the portions 47.

As best seen in Figures 10 and 11, the several globe forming elements may be fabricated by printing the outlines thereof upon sheets of planar material indicated by reference characters 49–54, inclusive. While in the drawings the sheets 49 and 50 and 51–54, are shown as integral, obviously the same may be severed along the sheet severance lines 55–58 inclusive. The sheets 49–54 may be composed of any suitable planar material having the desired amounts of flexibility and stiffness. I have found certain of the stiffer grades of paper, for example, that known as "Bristol," of relatively light weight to be satisfactory. Other suitable materials may be substituted therefor, as for example, cardboard, light weight metal sheets such as aluminum or alloys thereof, plastic sheets such as cellulose acetate, stiffened cloth and the like. On the upper surfaces 59–64 of the sheets 49–54, the outlines of the various globe forming elements are printed and between the relatively exposed or visible portions 45, the score lines 46 are impressed. This scoring is preferably a compression or other distortion of the sheet material so that the panels in the relatively visible portions of the globe forming elements between the scores 46 will remain substantially planar while the scored portions will easily bend to form the obtuse angles necessary in taking globe shape. The indentations 48 are preferably severed completely through the sheets 49–54. The external periphery of each of the globe forming elements as outlined on the sheets 49–54 is incised substantially through the sheet itself over most of the linear length thereof and at certain portions the sheet is not completely severed along said line so that the globe forming elements are retained in place and are temporarily supported by the remainder of the sheet during fabrication, transportation and subsequent storage. Thus, when the user obtains the sheets 49–54, he may easily remove each of the globe forming elements from said sheets by breaking the relatively fragile connections existing between the peripheries of the globe forming elements and the balance of the sheet. This form and temperorary connection with the sheet is also true of the base forming element 65 which appears in zone H in Figures 2 and 9. The under surface of each of the globe forming elements is coated with an adhesive material and I have found that it is economically desirable to obtain this result by fabricating the globe forming elements from sheets such as the sheets 49–54 having the entire under surface thereof coated with adhesive. This adhesive layer is relatively thin but is shown in exaggerated section in Figures 5 and 6. The visible portion on each of the globe forming elements has the outer surface thereof decorated, printed or otherwise treated so that the same displays a portion of a terrestrial globe and will take its proper place and appearance in the completely assembled globe. In assembly, the keying, that is to say the correlating of the various globe forming elements, is readily accomplished by vertically aligning corresponding longitudinal lines thereon. This process is also

simplified by the fact that most of the globe forming elements of the upper or lower edges thereof, that is to say the lines of latitude passing through continents and the keying of the globe forming elements, is thus readily visually accomplished by aligning the otherwise broken edges of continents or other representations appearing on the relatively visible portions of the globe forming elements.

While as described in the prior paragraph scoring along the lines of longitude on the relatively exposed or visible portions **45** may be made where desired such scoring may be omitted. The result of this will be that the bends occurring between the facets in the visible portions of the globe forming elements will be rounded. Such roundness is desirable in that the planar characteristics of the facets are less emphasized, thereby promoting a more rounded appearance on the finished globe.

It is desirable, however, that the various globe forming elements be provided with scoring between the relatively exposed and relatively unexposed portions thereof. Such scoring is indicated generally by reference character **9** and in the case of the globe forming elements **41***a* and **41***b* additional scoring **10** of like character generally substantially spaced from and parallel to the scoring **9** thereon, is provided. Such scoring is advantageous in that it permits a more ready forming of the bends in the globe forming elements to permit the parts thereof to take the angular disposition best illustrated in Figure 2. As previously described the scoring **9** and **10** may be accomplished by incising, compressing or otherwise promoting the tendence of the material, of which the globe forming elements are composed, to bend or flex or form a fold along the lines of latitude in the finished globe which lie at the juncture between the relatively exposed and the relatively unexposed portions of each of the globe forming elements.

Each of the globe forming elements at one end of the visible portion thereof is provided with a connecting tab; thus the elements **30**, **31**, **32**, **33**, **34**, **35**, **36**, **37**, **38***a*, **38***b*, **39***a*, **39***b*, **40***a*, **40***b*, **41***a*, **41***b*, as well as the base forming element **65**, have the tabs **66–82** respectively.

The globe forming elements **40***a* and **40***b* differ from the other elements in being provided with groups of slots **83–86** which are adapted to be detachably engaged by the hook tabs **87**, **88**, **89** and **90** respectively, as will be more particularly described here and below. The hook tabs **87–90** are disposed within the equatorial support carrying portions **91** and **92**. These portions **91** and **92** are seen in the lowermost part of Figure 11. The portions **91** and **92** have a plurality of indentations which extend from the outer edge thereof up to the latitude line forming the nearest border of the relatively exposed or visible portions of the globe forming elements **41***a* and **41***b*. These indentations form a plurality of separate flaps generally indicated by numeral **93** and those of the flaps **93** which are not provided with the hook tabs **87–90** are provided with U shaped incisions to form the equatorial support carrying tabs generally indicated by reference **94**.

Assuming the parts to have been formed as previously described the user would obtain one complete set of sheets such as the sheets **49–54** and one method of assembling the globe is here given by way of illustration.

First, the base forming element **65** is removed from the sheet **50** and since it is carrying a layer of adhesive on the rear or bottom side thereof as viewed in Figure 10, the tab **82** has been wet on top surface thereof; that is to say, the surface thereof corresponding or coplanar with the surface **64**, treated with a suitable solvent and then the top surface of the tab **82** is placed in contact with the under surface of the opposite end of the base forming element. By virtue of the shape of this element when the tab **82** is so connected the base will take the form seen in Figures 1, 2 and 9. It will be noted in Figure 10 that this base forming element **65** which forms the zone H in Figure 9 may carry thereupon printed or similar indicia, indicating the a. m. and p. m. hours.

In connection with the adhesive layer on the wrong or underneath side of the globe forming element **65**, it may be stated that I have found ordinary water soluble adhesive to be satisfactory. It will of course be obvious that where desired other adhesive materials may be substituted therefor and corresponding solvents utilized in the adhesive interconnection of the parts.

Assuming now that the globe will be built up beginning at the North Pole and continuing down to the Equator, and then beginning at the South Pole and continuing up to the Equator, the user may remove from the sheet **49** the globe forming element **30**. The tab **66** is moistened and the upper surface thereof is adhesively secured to the under surface of the adjacent end or free edge of the element **30**. As viewed in Figure 10, this would necessitate a clockwise movement of the tab **66**. After the tab is thus connected, the element **30** will take the shape of a squat cone and the score lines radiating from the center thereof will give the outer surface of the cone a faceted external appearance. This element **30**, when thus formed, forms the polar cap or the portion existing in zone A*n* on Figure 9.

Next, the globe forming element **32** is removed from the sheet **50** and the tab **68** is moistened and the upper surface thereof is adhesively secured to the under surface of the adjacent end or free edge of the element **32**. As viewed in Fig. 10, this would necessitate a clock-wise movement of the tab **68**. After the tab is thus connected, the element **32** will take the shape of a squat cone and the score lines radiating from the outermost edge thereof will cause the surface of the cone to take on the faceted external appearance of the relatively exposed portions of the element **32**, that is to say, those portions disposed radially outward of the line **100** are provided with the score lines which are radially disposed and which cause the faceting previously described. The relatively concealed portion of the element **32** is cut along lines radiating from the centralmost portions thereof and these cuts terminate outwardly at the line **100**. In Fig. 10 these cuts are indicated by thicker lines than are used to indicate the score lines of the relatively exposed portion. In Figure 10, the relatively exposed portion is indicated by numeral **101**, while the relatively concealed portion is indicated by numeral **102**. The cutting just described, therefore, divides the concealed portion **102** into a plurality of tabs or flaps, and the adjacent edges of these tabs or flaps may be caused to overlap when the tab **68** has been joined with the adjacent free edge of the element **32**, as previously described. This overlapping is strengthened by the adhesive coating of the rear surface of the sheet **49**. Thus, by moistening the under surface of the said sheet, or more particularly, the under surface of the flaps or tabs in the relatively concealed portion **102**, the under

surfaces of said tabs adjacent the slits which form them are secured to the upper surfaces of the next adjacent tabs forming a plurality of radially arranged reinforcing ribs. By the operation just described, the portion of the globe 20, lying within the zone Bn, is formed.

It may thus be noted at this point that by providing the coating of adhesive on the rear surfaces of the sheets 49—54, inclusive, the adhesive is readily available for the operation just described as well as the subsequent assembly operations to be described herein below.

The connection of the element 30 to the element 32 may be accomplished by moistening the under surface of the element 30, and adhesively securing the same to the upper surfaces of the relatively concealed portion 102. This connection may be clearly seen in Fig. 2 at the uppermost portion thereof.

In assembling zones An and Bn, while the adhesive is in an unset state, these parts may be aligned with relation to each other so that the outer peripheral edge of the element 30 coincides with the line 100 on the element 32. Furthermore, these two elements are axially rotated with relation to each other so that the score lines on the relatively exposed portion thereof come into alignment. The score lines on the exposed portions of said elements preferably have printed thereon radially disposed lines which form lines of longitude on the finished globe. Numerical markings, indicating the degree of longitude, will thereby facilitate the proper orientation of these parts with relation to each other, and where desired, other indicia may be used for this purpose.

Next, the element 34 is removed from the sheet 49, and is treated, generally, similarly to the treatment just described in connection with the element 32. The tab 70 is moistened and secured to the adjacent free edge of the element 34 and the upper surfaces of the tabs in the relatively concealed portion 104 are adhesively secured to the under surface of the exposed portion 101 so that the peripheral edge of the latter coincides with the line 105. Alignment of the longitudinal lines which are colinear with the score lines on the exposed portion 103 is now made. The exposed portion 103 forms the zone Cn.

The element 36 is assembled in a manner similar to that described in connection with the element 32 by the connection of the tab 72 to the opposite end free edge of said element. The relatively concealed portion, that is to say, the portion indicated by numeral 47 on Fig. 10 has the notches, indentations or slits 48 lapped and the upper or forward surfaces thereof are secured to the under surface of the portion 103. The outer peripheral edge of portion 103 is brought into alignment with the line 106. The exposed portions indicated by reference character 45 on Fig. 10 form the zone Dn.

The formation of the zone En is accomplished by the joining together with the elements 38a and 38b. Thus, the tab 74 may be connected to one end of the element 38b, while the tab 75 may be connected to the opposite end of the element 38a. Here again, the relatively exposed portions generally indicated by reference character 45 form a polygonal surface with a low order of angularity between the several planes thereof. The lines 107 form a guide for relatively positioning the concealed portions generally indicated by reference character 47 when the latter are adhesively secured to the under surface of the exposed portion 45 of the element 36.

Zone Fn is formed by the connection of the element 40a and 40b in a manner similar to that described in connection with the elements 38a and 38b. With the exposed portions thereof showing the sets of slots, 84—86 inclusive, the relatively concealed portions of the elements 40a and 40b have the tabs thereof overlapping in the previously described manner and in turn, have the outer surfaces thereof adhesively secured to the inner surfaces of the elements 38a and 38b; the lines 108 serving to provide means for proper alignment of the parts vertically, since said lines 108 have a horizontal disposition in the finished globe, that is to say, horizontal with relation to the axis of the globe penetrating the North and South Poles. The outer free and ultimately lower edge of the zone Fn is colinear and may be designated as forming longitudinally ½ of the Equator, that is to say ½ of the width of the black line used to indicate the Equator.

After the Northern Hemisphere of the globe 20 has been assembled, as has just been described, so as to include zones An, En, Cn, Dn, En and Fn, this structure may be further reinforced by adhesive connection to the inner surfaces thereof of a reinforcement liner. The installation of this liner 110 may be readily accomplished by moistening all of the then inner exposed surfaces and applying said liner thereto. The liner 110 is preferably composed of a thin tissue having good fibre strength so that when the tissue is placed in contact with the moist adhesive on the then inner exposed surfaces of the globe forming elements in the Northern Hemisphere, some of the moisture in the adhesive may penetrate said liner and soften the same so that it may be molded to conform to the slight surface irregularities caused by the lapping of the various layers and tabs. Not only does the moisture thus soften the liner 110 but the adhesive also penetrates the same to form a strong reinforcing connection thereat.

In connection with the application of the liner 110 to the Northern Hemisphere of the globe, as has just been described, it is to be noted that it is desirable that said liner shall not extend sufficiently to cover or obstruct all of the sets of slots 83—86.

On Fig. 2, the liner 110 has been broken away for the purpose of showing the organization of the parts.

The Southern or lower hemisphere of the globe has been constructed in a manner substantially identical with that described in connection with the Northern Hemisphere of the globe 20. Thus, beginning with the element 31, this is formed into a squat cone and is connected to the element 33. Following this, the element 33 is connected to the element 35. Element 35 is connected to the element 37 and element 37 is connected to the elements 39a and 39b. These last mentioned elements 39a and 39b are connected together to form a single ring which forms zones Es. Secured to the lower edge of the elements 39a and 39b are the elements 41a and 41b, having the tabs 87—90 inclusive. It will be noted from a consideration of Fig. 11, and particularly, the sheet 54, that the tabs 87—90 are substantially identical with each other and one of these tabs, for example, tab 89 is shown enlarged in Figures 2 and 5. Since all the tabs 87—90 are substantially identical, a detailed description of one will suffice for all.

As seen in Figures 2 and 5, tab 89 includes a body portion 112, a central tip 113, and lateral tips 114 and 115.

As viewed in Fig. 2, the central tip 113 may penetrate, in an outward direction, the horizontally disposed slot 116 of a group of slots 83; while the lateral tips 114 and 115 may outwardly penetrate the vertical slots 117 and 118. Since the lateral tips 114 and 115 are obliquely set or positioned in a direction away from the direction in which the central tip 113 is normally inserted through the slit 116, a latching or hooking action is obtained. The insertion of the lateral tips 113 and 115 may be readily accomplished by flexure of these parts as they are inserted into the relatively vertical slots 117 and 118.

The interconnection of the two halves of the globe may be temporary in view of the fact that the tips 113, 114 and 115 may be withdrawn from the corresponding slots within which they have been placed and thus, the two halves of the globe may be disengaged. This ability to disconnect the two hemispheres is of value in that they may be nested for storage, and to take up at least half of the space they would normally occupy.

In Fig. 5, I have also shown the manner of engaging a hooking tab attached to the lower hemisphere with the corresponding slots in the lower edge of the upper hemisphere. This manner is the same as that previously described in that the tips of the hook and tab are exposed exteriorly. Whether the tips go in or out with respect to the center of the globe 20 in the assembly operation is a matter of choice.

As a matter of fact, the assembly of the two hemispheres to form the globe will be materially facilitated and easily performed without the use of tools if the hook tabs 87–90 inclusive are maintained on the outside of the globe and the tips of the tabs are inserted through the slits 116, 117 and 118 from the outside in the manner clearly seen in Fig. 16.

Each of the hook tabs 87–90 inclusive, at the time that the two hemispheres are assembled, stands up so that they may be easily manipulated because the material therearound indicated by reference characters 119 is removable, and may be removed during assembly.

In the connection of the elements 41*a* and 41*b* to each other, the tabs 80 and 81 are used to form a complete circular globe forming element and in one method of assembly the tab 81 may be connected to the relatively untabbed end of the element 41*a* while the tab 80 may be connected to the relatively untabbed end of the element 41*b*.

The relatively concealed portions 120 and 121 have a plurality of tabs which lap in a previously described manner and are, of course, adhesively secured to the inner surface of the relatively exposed portions of the globe forming elements 39*a* and 39*b*, which, when assembled, have formed the zone Es. Thus, when the globe forming elements 41*a* and 41*b* have been put in their proper place, not only do their visible portions form the zone Gs, but the equatorial support carrying portions 91 and 92 as well as the hook tabs 87–90 extend upwardly. These portions 91 and 92 actually form a continuous ring of separate upwardly extending flaps and as seen in Fig. 7, these flaps 123, 124 and 125 have corresponding lateral vertical edges 126, 127 and 128, provided with the short, horizontally directed slits or indentations 129, 130 and 131. Since, as best seen in Fig. 2, the flaps corresponding to the flaps 123–125 must reverse their direction and converge slightly so they leave the equatorial plane, indicated, let us say, by the plane 3—3 of Figure 2, the overlap which occurs at the vertical edges thereof is controlled by the engagement within the slots 129–131 of the vertical edges 134–136. This condition is shown in Fig. 8. So then, the slots 129–131 control the amounts of convergence and after the adhesive carrying surfaces thereof have been moistened (this will be the inner surface since the backs of the sheets 49–54 have originally been connected with a layer of adhesive to the rear surface thereof), the lap areas will be adhesively interconnected to integrate the flaps corresponding to the flaps 123—125. Thus, the portions 91—92, as seen in Fig. 11, form an upstanding guide rim upon which the globe forming elements lying in the zone Fn may engage as a cuff or sleeve thereupon. A further reinforcing effect is provided by manually downwardly folding the upper, free edges, generally indicated by numeral 137 upon themselves along a horizontal line, passing through the slots or indentations corresponding to the indentation 129. This construction is clearly seen in the left-hand portion of Fig. 2 and the upper portion of Fig. 6. This folding, just described, is about the inner surface upon which the adhesive is situated so that a reinforcing rim or flange 138 is formed. The rounded surface upwardly presented by this flange facilitates the passage thereover in a downward direction of the edge 139 which is the lowermost free edge of the upper hemisphere or the lower edge of the zone Fn. The edge 139 forms one-half of the Equator. The flaps 123–125 include curved incisions which are incomplete and which form the Equator support carrying flaps 94. In Figures 7 and 8, we are looking at the inner surfaces of the globe forming element thereat and hence, as there seen, these inner surfaces carrying adhesive thereon, and when the flaps 94 are bent down through an angle of 180° toward the viewer, and then up through 90°, they may be adhesively secured to the upper surface of the equatorial support 140. This construction is best seen in Figs. 2, 3, and 6. As seen, particularly in said figures, the fold just described includes two bends. The purpose of the first 180° bend is to reinforce the edge thereat, and to provide a relatively elevated area of material which will block off any view into the interior of the globe underneath the edge 139, and will also serve to support the said edge substantially completely about the periphery thereof.

By virtue of the provision of the orifice 141 in the support 140, several purposes are accomplished: First, by inserting the fingers through the said orifice, the lower hemisphere may be conveniently grasped and manipulated.

Second, the weight is reduced without loss of strength where needed.

Third, the lower hemisphere provides a convenient receptacle for auxiliary material to be used in connection with the use of the globe.

Fourth, the liner 142 for the lower hemisphere may be installed before or after the incorporation of the support 140. Normally, the procedure of installing liner 142 prior to the installation of the support 140 is desirable, as it will probably be more convenient.

In connection with the exposed portions of the hook tabs 87–90 whether they be the body portions of said hook tabs or the tips thereof, it is desirable that they be located in portions of the globe which are relatively free of land area, since when they occur in water area, the surface irregularity caused thereby is of no practical disadvantage or consequence. Thus, I have found

that these hook tabs may be located desirably at the following positions:

Starting with the meridian at 30° west longitude in south part of the north Atlantic Ocean, I have placed the first tab, the opposite to this, the second tab is at least 150° east longitude in the Pacific Ocean at the Caroline Islands. Now traveling eastwardly from said 150° east longitude through 90° to 120° west longitude, which is in the northeast Pacific Ocean south of Lower California, we have the location for the third tab. The last tab is opposite at 60° east longitude in the northwest part of the Indian Ocean.

Turning now to the other form of the invention, as illustrated in Figs. 12 to 15, inclusive, this illustrates an alternate form of hook tab construction and for the purpose of avoiding needless repetition parts corresponding to those of the first embodiment are given the same reference characters with the addition of a single prime suffix.

This form of hook tab differs principally from that shown in connection with the first embodiment in that the central tip is eliminated and the material which would normally form the central tip is laterally extended in such a manner that the upper end of the body of the hook tab may be folded upon itself to form double layered tabs. The lamination of this alternate form of lateral tabs is facilitated by making the fold along a generally horizontal axis and bringing two adhesive surfaces in contact. Here again, the lateral tips may be flexed for insertion or removal.

It may thus be seen that I have provided a novel and useful terrestrial globe structure which may readily: be fabricated and shipped in collapsed condition; be easily set up and temporarily partially disassembled for more compact storage; act as a container for auxiliary material to be used therewith; and may be constructed in large quantity at low cost.

While I have described the globe as being separable, that is to say, detachably engageable along the Equator forming portions thereof, it will be obvious that where desired the interconnection of the two hemispheres may be made permanent with a consequent loss of the feature of demountability.

The foregoing description has been made detailed for the purpose of clarity only and I do not wish to be confined to the exact details shown and described because obvious modifications will occur to persons skilled in its art to which the present invention relates.

I claim:

1. A globe of the character described composed of two connected hemispheres, each of said hemispheres being made up of a plurality of overlapped annular bands, each band forming a frusto-conical shape, the various bands in each hemisphere having respectively differing inclinations with any smaller band departing from cylindrical more than its adjacent larger bands so that the completed globe approaches a spherical shape the part of a band which underlaps an adjacent band being split to form it into a plurality of independent tab portions, said tab portions being adhesively secured to the face of the band over which said tab portions extend, and tongue and slot means for detachably uniting the two hemispheres to form a globe.

2. A globe of the character described composed of two connected hemispheres, each of said hemispheres including a plurality of pyramidal overlapped sections, each of said sections being of frusto-conical shape, the various sections in each hemisphere having respectively differing inclinations with any smaller section departing from cylindrical more than its adjacent larger sections so that the completed globe approaches a spherical shape said sections having their overlapped parts adhesively united, and a polar cap portion for each hemisphere adhesively secured over the end of said hemisphere.

3. A globe of the character described composed of two detachably connected hemispheres, each of said hemispheres including a cap-like pole portion and a plurality of connected annular bands, each band forming a frusto-conical shape each band having tab portions underlying its neighbor and adhesively secured to the back thereof, the bands increasing in diametrical size and differing from one another in angularity from the pole portion to the Equator, and means for establishing a detachable connection between the two hemispheres to form a complete globe.

4. A globe of the character described comprising a pair of connected hemispheres, each of said hemispheres being made up of a plurality of overlapped, circumferentially extending annular bands, each of said bands forming a frusto-conical shape, the various bands in each hemisphere having respectively differing inclinations with any smaller band departing from cylindrical more than its adjacent larger bands so that the completed globe approaches a spherical shape the overlapped parts of the bands being adhesively united, and means for securing the two hemispheres together to form a complete globe.

5. In a globe of the character described composed of a plurality of joined annular bands of pyramidal form, a band of such character consisting of an arcuate strip of sheet material having its ends overlapped and joined to form the strip into an annulus of frusto-conical form, the strip having a plurality of radial slits extending inwardly for a distance from one of its longitudinal edges to form a plurality of separate tabs along that edge of the strip, said tabs constituting elements to overlap part of an adjacent strip and be secured thereto in the assembly of the globe.

6. In a globe of the character described, a strip as called for in claim 5, and wherein the strip is provided with a plurality of radial fold lines in a non-overlapping portion of it, said fold lines constituting continuations of the slits and forming guides by which the strip may be folded to form facets in the development of the globe.

7. A globe of the character described consisting of two connected hemispheres, each of which is made up of a plurality of overlappingly united annular sheet material strips, each annular strip forming a frusto-conical shape and being of different angularity than its neighbors one of said hemispheres being slitted at spaced intervals and the other hemisphere having tabs overlying the outer face of the slitted hemisphere whereby the tabs have parts accommodated in the slits to thereby detachably unite the two hemispheres and form the globe.

8. A globe composed of two hemispheres, each of said hemispheres being made up of a plurality of annular bands secured together on horizontal lines in partially overlapping relation, each annular band forming a frusto-conical shape and being of different angularity than its neighbors and means for detachably uniting the hemispheres on a horizontal line whereby the hemi-

spheres may be detached and handled as separate units, said means consisting of tongues carried by one hemisphere and slits carried by the second hemisphere, said slits adapted for reception of the tongues to hold the hemispheres together and form the globe.

9. A globe of the character described comprising a pair of hemispheres, each of said hemispheres being made up of a plurality of annular angularly disposed overlapping bands joined on horizontal lines and composed of sheet material, the two hemispheres telescopically fitting together adjacent the equatorial line of the globe, one hemisphere having a part fitting within the other hemisphere adjacent to said equatorial line, said part being provided with inbent flaps, and a reinforcing ring within the flapped hemisphere, said flaps being secured to and supporting said reinforcing ring.

10. A globe of the character described comprising a pair of hemispheres adapted to telescopically overlap adjacent to the equatorial line of the globe, a part of one of the hemispheres being concealed by being overlapped by a part of the second hemisphere, said concealed part being provided with inwardly bent flaps, a stiffening member in the form of a ring disposed flatwisely across the concavity of one of the hemispheres, the inwardly bent flaps being attached to and supporting said stiffening member.

11. A globe as provided for in claim 10 wherein the stiffening member is provided with a central aperture, and the tabs which support said member are formed in and bent down from a part of the body of the hemisphere in which the stiffening member is located.

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