

G. W. R. HARRIMAN.
 MEANS FOR PRESENTING GEOGRAPHICAL AND STATISTICAL INFORMATION.
 APPLICATION FILED APR. 17, 1912.

1,192,829.

Patented July 25, 1916.

3 SHEETS—SHEET 1.

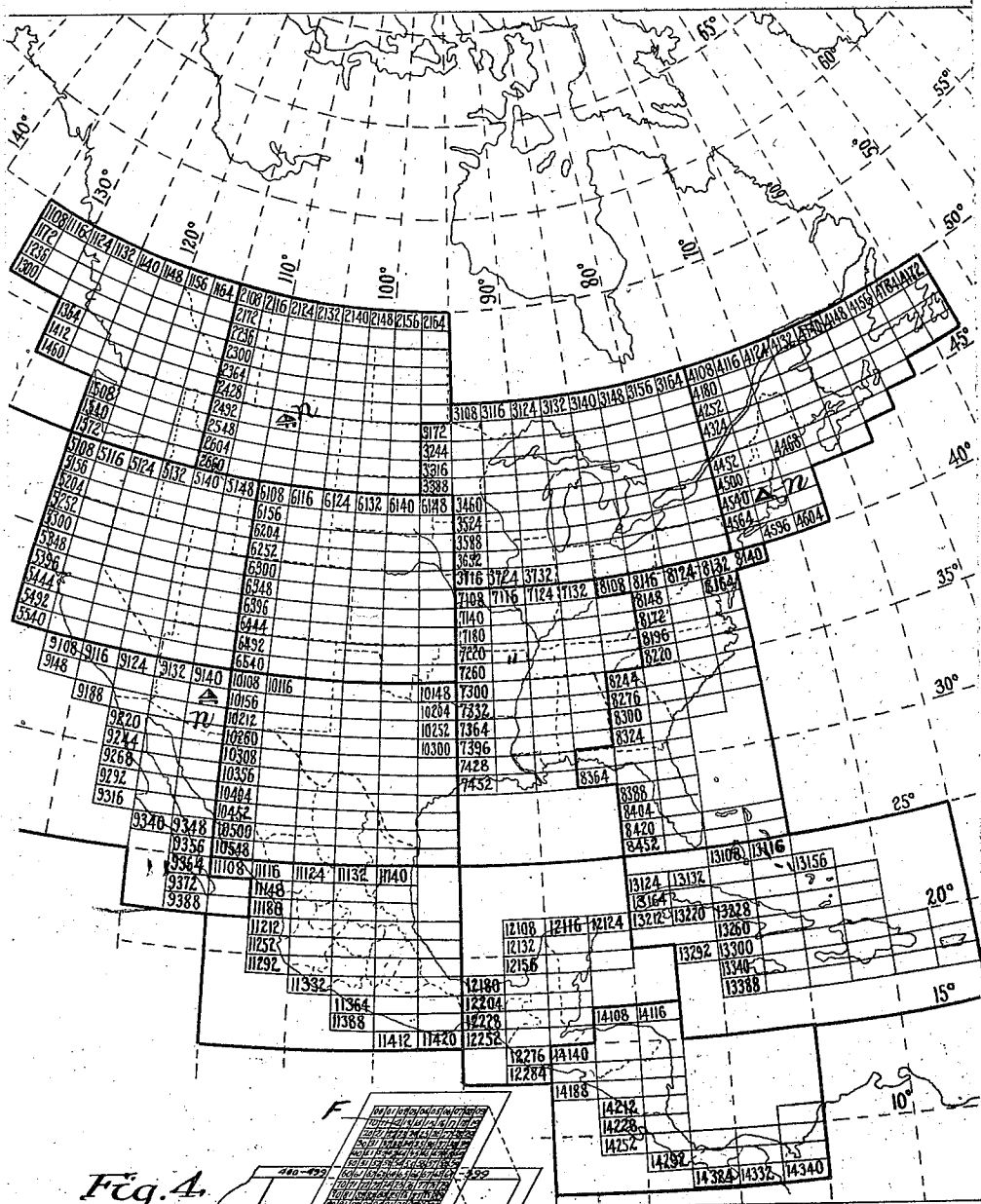


Fig. 4.

Fig. 1.

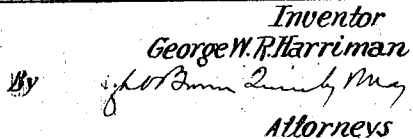
Witnesses:

G. L. Johnson
E. Batchelder

By

George W. R. Harriman
Highot Bunn Lindley May
 Attorneys.

3 SHEETS—SHEET 2.



G. W. R. HARRIMAN.

MEANS FOR PRESENTING GEOGRAPHICAL AND STATISTICAL INFORMATION.

APPLICATION FILED APR. 17, 1912.

Patented July 25, 1916.

3 SHEETS—SHEET 3.

1,192,829.

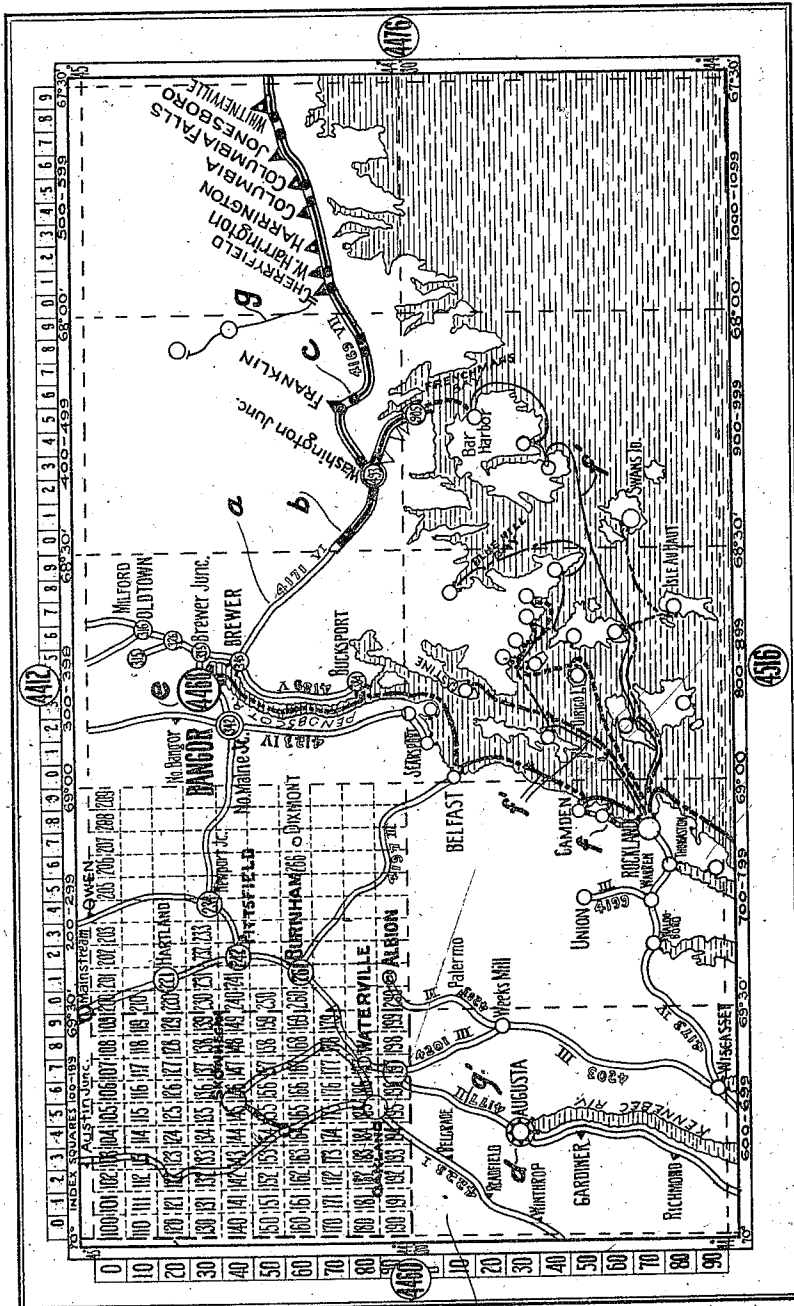


Fig. 3.

Witnesses:

G. L. Johnson
E. R. Wheeler

Inventor
George W. R. Harriman
By *Higginson Smith May*
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE W. R. HARRIMAN, OF MALDEN, MASSACHUSETTS.

MEANS FOR PRESENTING GEOGRAPHICAL AND STATISTICAL INFORMATION.

1,192,829.

Specification of Letters Patent. Patented July 25, 1916.

Application filed April 17, 1912. Serial No. 691,433.

To all whom it may concern:

Be it known that I, GEORGE W. R. HARRIMAN, a citizen of the United States, and resident of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Means for Presenting Geographical and Statistical Information, of which the following is a specification.

This invention relates to a means for representing graphically and in condensed tabular form the location geographically of centers of population, political divisions, and other fixed places and establishments; the predominating characteristics of the same; the courses and lengths of channels of communication together with the ownership of such of them as are property.

The object of the invention is primarily to enable the location of any desired places and the routes by which they may be reached to be quickly found.

To this end, the invention consists of a system of delineators furnishing a means or instrumentality for segregating the area of the world into subdivisions, hereinafter called "atlas unit areas" or "atlas units" of specific location and definition, each of which is represented by a distinctive symbol, the component parts of such symbol being constructed according to basic formulæ devised by me, and so exhibited and operated as to provide for the disclosure of facts and conditions predetermined through natural causes or their phenomena, separately or in combination with the facts and conditions attendant upon and consequent to the activities or devices of man as regards each particular subdivision, and the relation such subdivision bears to any or all other subdivisions of the world as above described, together with a system of delineators for recording the same, through a series or collection of charts, tables and diagrams arranged together in combination and correlation for ready cross-reference, in the several parts of such collection. In one form for public convenience or distribution or reference this collection is bound together in a folder not unlike a pamphlet consisting of several leaves and pages, which is adapted to be folded into compact form in such a way that reference may be made readily and directly from one part to another.

In the several drawings accompanying and forming a part of this application, I

have illustrated that portion of my invention which is particularly claimed in this patent, the same comprising the means for locating accurately and concisely places and routes of transportation in any and all parts of the world. Such means are embodied in a map or chart, or in a correlated series of maps or charts having the characteristics herein-after particularly described and claimed; and in the combination therewith of a translucent screen bearing identifying symbols adapted to be superposed on the map or chart for connecting such symbols with definite areas of the chart, all as hereinafter fully and particularly described.

In these drawings Figure 1 is a representation of one of the many divisions of the earth illustrating the system of subdividing and indexing the earth's surface, which forms that part of my invention herein claimed. Fig. 2 is a view of one of the maps. Fig. 3 is a view of one of the divisions indicated in Fig. 1, which I term an "atlas unit". Fig. 4 is a perspective view of a portion of one of the maps and of the screen for locating identifying symbols thereon.

The same reference characters indicate the same parts in all the figures.

The particular invention which I here claim, broadly stated, consists in a system or means for subdividing the whole or a portion of the earth's surface on lines which are universally conventional, namely, the meridians of longitude and the parallels of latitude, and in the association therewith of individual identifying symbols which are independent of political boundaries or designations and are of a character such as to be universally comprehensible, at least by all civilized peoples. The concrete material embodiment of the invention comprises a map, or a series of maps representing one or a plurality of the divisions which are bounded by the geographic lines as above stated and having in association therewith the identifying symbols, or means by which said symbols may be applied to specific areas. Without intending to restrict my invention to a map of any particular part of the world, I have shown for illustration, a map of a continental area of the world divided according to my system into atlas units, a map of a political division of the United States, also divided according to my system into atlas units, and a larger scale map of one of the individual atlas units. It

is to be understood that the explanation hereinafter given with reference to the particular maps illustrates an invention of general application adapted to be applied to a map of any other part of the world, or of the entire world, and that I do not limit the invention in any other manner than appears by the express terms of the claims themselves.

The term "atlas unit" hereinbefore used is one which I have adopted for assistance in explaining the invention and without limiting intent. I will now more particularly define that term as here used, in connection with a detailed description of the invention and of the manner in which atlas units are distinguished from one another. For this explanation, reference is to be had to Fig. 4, in which I have shown the habitable part of the North American continent, except Alaska, divided into unit areas, to which, as hereinbefore stated, I have given the designation of atlas units. Each of the subdivisions of territory or atlas units is a quadrangle bounded by parallels of latitude and meridians of longitude, its dimensions being one degree of latitude from north to south and two and one-half degrees of longitude from east to west. The entire area of the continent or other portion of the world's surface which is to be classified and tabulated according to my system, on the entire surface of the world is thus divided into units of which the boundaries are determined as above indicated by definite geographical lines. It is not essential that the dimensions of the units should be those given, that is, one degree of latitude, by two and one-half degrees of longitude, for these dimensions may be varied without departing from the spirit of the invention, but it is of the essence of the invention that the boundaries should be determined by definite and universally conventional geographical lines, as the parallels of latitude and meridians of longitude. These units are all identified, each having its own individual identification number or symbol. Preferably I use numbers for this identification, and according to the coefficient or first figure or figures of the number, indicate the general section of the country in which the unit is located. In Fig. 1, it will be noted that certain groups of atlas units, or, in other words the regions containing a number of such units, are inclosed and separated from one another by heavier lines than those indicating the boundaries of individual units. These groups or regions I term "major divisions," and all the atlas units in one of these divisions are given the same coefficient. For instance, the northwestern division has the coefficient 1, and all of the units therein have numbers of which the first figure is 1. The next group or major division has the coefficient 2, the

next group which includes the States and provinces bordering on the Great Lakes of North America has the coefficient 3, the division containing the New England States and the contiguous provinces of Canada has the coefficient 4, the lower Mississippi Valley has the coefficient 7, the Southern Colonial States 8, and so on, the highest coefficient in this continent being 14 which is applied to the group of units covering Central America and the Isthmus of Panama. The further numbers or digits of the atlas units are appropriated or applied according to the arrangement of units in the major division, such units being numbered from west to east in consecutive lines, as indicated on the said Fig. 1.

In further explanation of the nomenclature here adopted, and used in the appended claims, relating to the identifying symbols of the atlas units, each symbol may be considered as consisting of a coefficient and a character. The coefficient in the system of symbols here illustrated, consists of the first digit where the symbol is a numeral of four digits, and the first two digits when the numeral contains five; and the "character" comprises the remaining three digits. As a more general definition, applying to other symbols than numerals which may be adopted for the same purpose within the scope of the invention, the coefficient may be considered to be that part of the symbol which identifies the unit area with the region or major division in which the unit is contained, such coefficient being the same for all of the units in one region or major division; and the character as that part of the symbol which distinguishes the several units in the same region or major division from one another. The coefficients are the same for all the units in one major division, but different in the various major divisions, while the characters of all the unit areas in the same major division are different, although they may be the same, and in some instances are, as to unit areas in different major divisions or regions.

As here illustrated the numbers of adjacent atlas units differ by intervals of eight units instead of running consecutively with intervals of only one unit. This is to adapt the atlas unit system of numbering to the consecutive numbering of contrivances in the nature of eight page folders, it being a part of my invention to enable each atlas unit to be the subject of one eight page folder, of which the page containing the atlas unit may be given the number of that unit. The other pages may be numbered consecutively from the atlas unit number without duplication of numbers. Thus one system of numbering serves to designate the pages of all the folders which may ever be produced describing the entire surface of

the earth, and also each unit of the earth's surface has its individual and invariable number which falls in with the system of paging.

6 The above illustration is not given with any idea of limiting the invention to any particular system or arrangement of numbers, but simply to explain the meaning of the specific character of numbering 10 shown. Any system of numbers or other symbols used in connection with the atlas units or other unit areas in which the symbol of each unit is different from those of all other units is within the scope of the invention as hereinafter claimed.

15 The North American continent is shown simply for illustration of the method according to which I divide the surface of the earth into geographical atlas units of permanent character. It is my purpose to subdivide other continents and lands of the earth in the same manner, giving to each its individual distinguishing number or character, as my invention is not limited to thus 25 identifying any particular part of the earth's surface.

In order to identify the location of any place or locality, however obscure, I have devised a system according to which each 30 atlas unit is divided into a large number of index squares which can be instantly identified and of which the area is so small that rarely will two centers of population or industry be contained in the same square. 35 Turning to Fig. 3 which shows one of the atlas units enlarged, specifically the unit designated 4468, it will be noted that the unit is divided by lines of dashes into two rows of five quadrangular divisions each, making ten divisions in all. The dimensions of these divisions are one-half a degree, or thirty minutes, in each direction. The divisions in the upper half are given the coefficients 1, 2, 3, 4, and 5 and those in the 45 lower half of the atlas unit the coefficients 6, 7, 8, 9, and 10, respectively. These divisions or squares are still further sub-divided each into one hundred parts which are designated "index squares" and extend over three 50 minutes of latitude and longitude, respectively. The index squares in each division are numbered consecutively from zero to 9 in the upper horizontal row, from 10 to 19 in the second and so on until in the lowermost row the numbers run from 90 to 99. 55 The coefficient for the number of any particular index square is the number of the larger square previously mentioned, of which there are ten in each atlas unit. Thus, for instance, the number 233 indicates index square 33 in square 2 of the atlas unit, and will be found in the fourth row and the fourth column of the second large square of the atlas unit. From the foregoing example 60 it will be appreciated that the same defini-

tion of "coefficient" and "character" given in connection with the symbols applied to the atlas unit areas, applies also to the symbols of the subsidiary quadrangles or index squares. By this system each atlas unit is 70 sub-divided into one thousand parts which can be very readily located on the map, and of which the longest dimension can never exceed three and one-half miles.

In order to locate index squares on the 75 atlas unit I may employ a translucent screen indicated at F in Fig. 4 which is of approximately the dimensions of one of the main quadrangles of the atlas unit, and is sub-divided into one hundred squares numbered 80 as above indicated. This screen may be laid over any one of the main sub-divisions of the atlas unit and will then indicate at once the location of any individual index square. It is a part of my invention, however, to 85 provide the atlas unit map with index marks which have essentially the same function as the screen and may enable the screen to be dispensed with. This system of marks is shown on the margins of the map repre- 90 sented in Fig. 3. The columns in which individual units of each row appear are designated and numbered along the upper margin of the map, while the rows themselves are indicated along the left hand margin. 95 The divisions between the principal squares of the unit are indicated well enough by the juxtaposition of the 9 of one set with the zero of the next set along the top edge of the map, and by the juxtaposition of 90 and 100 zero at the middle of the row of figures on the left hand margin. By combining the number appearing at the end of any row with the number at the head of any column, the identifying character of the index 105 square formed by the intersection of that row and column is produced. Thereby the said marginal figures are means essentially equivalent to the translucent screen for applying the designating character to any in- 110 dex square. The coefficient of the symbol is determined by the position in the atlas unit of that one of the larger quadrangles into which the unit is divided, which contains the particular index square under con- 115 sideration. The index squares and the ten larger quadrangles of the atlas unit correspond in the atlas unit map to the unit areas and major divisions or groups in the map of the larger territory, such as the continental 120 map shown in Fig. 1.

Every locality is identified in my geographical system by the atlas unit and the index square in which it is located. As the index squares can not under any circum- 125 stances, in the particular system here described, represent more than a section of ground three and one-half miles square, it will be found almost without exception that not more than one locality will be found in 130

any one index square. Thus the number of the square in which this locality is found identifies and distinguishes the said locality from all other places in the same atlas unit, and when the index square number is coupled with the atlas unit number, the locality is identified and distinguished from all other localities of the earth. Thus, by identifying a locality by its atlas unit number coupled with its index square number, I have devised a system of code symbols by which any spot of the earth's surface may be identified, and which is of a character to be universally understood in all parts of the civilized world. When the system is in operation universally, every place can be identified in this way by a code number which is independent of the language of any country and can be understood by all civilized persons whether speaking the same language or not. This system is of particular value in connection with the shipment of goods from one locality to another, for instead of marking the goods with the name of the place to which the goods are shipped and with the name of the country in which the place is situated, all that is necessary is to mark the goods with the code numbers of which the first or atlas unit in the system here illustrated consists usually of four digits and never contains more than five, and the second or index square number is usually of three digits and cannot contain more than four. It is contemplated in my invention, and is a part of the same, to provide cards, tickets, and metallic disks or plates to be carried by persons or attached to packages of goods or the cars containing the same, on which are printed or stamped the code symbols of the places of departure or shipment, and of destination, with or without the symbol of the route over which the persons or goods are transported.

An important fact to be noted is that the unit areas or atlas units are independent of political divisions or areas and that the symbols for identifying them are likewise independent of any and all political designations or bounds. The map of an entire continent, or of any other part or the whole of the world, or of any selected region of the world, is divided according to my system on lines of latitude and longitude into quadrangular atlas units of the character indicated. These unit areas are established entirely by the meridians of longitude and parallels of latitude, and have no connection whatever with political boundaries. The map of a large section of the earth, such as that illustrated in Fig. 1, contains a plurality of political units, and the same thing may be true of a map of a smaller area of the earth, and even of the individual atlas unit maps such as shown in Fig. 3. The term "political unit" here used includes

countries, States, counties, and townships or towns and cities. The continental map shown in Fig. 1 includes several different countries; the States or provinces comprised within these several countries, and the counties, towns, and other subsidiary political divisions comprised within such States, or provinces. My method or means of identifying areas of the earth takes no account of the boundary lines of any of these political divisions, and the same unit area may include a number of such divisions or parts of the same.

The means above described for identifying localities of limited area evidently enables towns and settlements even the most obscure, to be indexed concisely and in a manner permitting the exact location of any such town or place on the map to be found readily, since the location of any place on the map can be instantly found by noting its index square number in the index, and finding the location of that index square either by the use of the screen, above described, or by the numbers located in the margin of the atlas unit map. For the purpose of illustration in connection with the present drawings which represent a part of the State of Maine, we will consider that it is desired to find the location of the city of Augusta on the map. Assuming that the location symbol for this city is that of atlas unit 4468 and index square 634, located in appropriately designated columns beside the name "Augusta" in a column of names, the identifying symbol is found by reference in the ordinary way to the index, the number 4468 being in a column designated "Atlas unit," and the number 634 in a column designated "Index square." The atlas unit 4468 is that represented in Fig. 3. Number 634 indicates that Augusta is in the sixth main square, which is the first one of the second row, and index square 34 of that main square. Carrying over from numeral 30 at the left of the lower half of the map and downward from numeral 4 at the top of the map above the sixth main division we find the intersection of these lines at a point where a symbol representing a locality is shown on the map beside which is the name "Augusta."

It will be seen that the means of symbol identification of localities above described provides a system of identification which is fixed and absolute, but not arbitrary, because it corresponds to the actual geographical locations of the places. The numerical system is flexible and leaves room to accommodate symbols for new settlements and establishments to exactly the same extent that the surface of the earth has room for the physical presence of such establishments, and thus no matter how many new settlements may be established, or wherever they

may be located, the designating symbol is automatically ready to be applied. The code system is thus fixed for all time.

Preferably the atlas unit number is placed on the map in connection with the most important city or town located within that unit. The location of the city is designated by a large circle within which the atlas unit number is printed and the name is printed beside the circle in prominent type. Other places when they are junction points of railroads are identified by their index square numbers contained within the circles which fix their locations.

The map of a political or natural division of country, such as that indicated B² in Fig. 2 which represents an entire State, may and in this instance does, contain several atlas unit divisions. On this map the several atlas units are indicated by division marks which follow the same geographical lines of longitude and latitude as are indicated on the map of Fig. 1, and are plainly designated by the proper symbols, which are the same as in Fig. 1. The margins of said map bear index numbers in repeated series running from left to right from zero to 9 at unit intervals, and from top to bottom from zero to 90 with ten unit intervals, in the manner described in connection with Fig. 3, which are placed between the atlas unit division lines with a spacing corresponding to the spacing on Fig. 3 and allowing for the difference in scale, as shown clearly in Fig. 2.

As my invention has to do not only with the tabulating of physical conditions but also with operating conditions, including the time element, or a means for transportation from place to place, and with financial conditions or ownership of such means, I show prominently on the map the roads and the ownership thereof. The representation of railroad locations is made by double lines, one of which is designated in Figs. 2 and 3 by the character *a*. Ownership of railway lines is indicated by symbols *b* and *c* in the right hand part of Fig. 3. It will be noted that these symbols are equal in linear extent and that duplicate symbols are arranged end to end on one line. The symbols are drawn to accurate scale in length and designate the mileage of the line of road, the distance from any symbol to the corresponding point in the next symbol being a certain number of miles, conveniently, ten miles. By counting the number of these symbols and fractions thereof between any two places, the railroad mileage between these places can be quickly and accurately determined without the trouble of scaling off the total length of what may be an irregular line on the map, or looking up the mileage in a railway publication.

By comparing the symbols *b* and *c* it will be seen that they differ in form, the symbol

b consisting of a heavy line with rectangular enlargements at its ends and the symbol *c* of a line with circular enlargements. These are two of a practically unlimited series of different symbols, each of which designates a certain ownership. These and other symbols of similar character are shown in Fig. 2. All the symbols employed in any one compilation of which the map forms a part to designate ownership will be explained by a key forming a part of the compilation. It is intended of course that every line of railroad in the published map shall be shown with symbols of this sort, but for convenience and clearness they have not been so shown in Fig. 3, only a sufficient extent of the lines being provided with symbols to explain this aspect of the invention.

The locations of cities, towns, villages, and other establishments along the lines of communication are indicated by symbols which may have special meanings, and certain of which is shown in Fig. 3. As the invention has to do also with showing feasible lines of transportation and their terminations, I indicate such terminations in the case of navigable rivers by placing the symbol of the town at the head of navigation across the representation of the channel of the river as indicated at *d* and *e* in Fig. 3. All commercial facilities for transportation are indicated on the map, including not only railroads but also established lines of ships, indicated at *f*, stage lines, one of which is indicated at *g*, and electric railways *f*. It will be noted that beside the lines of communication I have placed numerical indications *g'*, consisting generally of a number expressed in Arabic figures, followed by a Roman numeral. These characters designate certain distinct routes and are used in connection with a route chart, which is related to my present invention but is not described or claimed herein. It will be noted that the first digit of all the numbers applied to the transportation lines shown in Fig. 3 is the numeral 4, which is the same as the first digit of the atlas unit number shown in this figure. In other words that, just as the symbols of the unit areas consist each of a coefficient and a character, so do the numerals or other symbols applied to the lines of transportation, the first digit of the latter class of numerals being taken as the coefficient and the remaining digits as the character. The correspondence or identity between the coefficients of the atlas unit symbols and of the symbols applied to the lines of transportation in that unit is designed to show the general location of the line of transportation, that is that such line is located in the major division or region designated by the characteristic coefficient. This system of route numbers taken in conjunction with my code sys-

tem of designating places thus gives a practically universal code language in terms of which shipping and receiving points and the lines over which goods and passengers are carried, are expressed. The rolling stock, ships, and other vehicles owned by established common carriers may be marked permanently with the route number of the line operated by that carrier, whereby the coefficient of the number indicates to shippers and carriers in all parts of the country, who need be equipped for the purpose with nothing more than a chart like that shown in Fig. 1 containing the atlas unit numbers, the regions in which such vehicles belong, and the directions in which returning vehicles should be moved. It is of course to be understood that the symbols applied to transportation lines need not necessarily be Arabic numerals any more than need be the atlas unit symbols, but the condition above set forth is met wherever a part of the symbols applied to the atlas units and to the lines of transportation, respectively, which corresponds to the coefficients above defined, is the same.

What I claim and desire to protect by Letters Patent is:—

1. A map or chart representing a portion of the earth's surface including a plurality of political units or areas and being subdivided into quadrangular unit areas, and identifying symbols associated with said unit areas, said symbols being all different from one another and being independent of political designations and bounds.

2. A map or chart representing so much of the earth's surface as includes a plurality of political divisions or areas, and bearing intersecting lines dividing such representation into quadrangular unit areas, and symbols associated with the several unit areas; said symbols being different from one another, whereby to distinguish and identify the unit areas with which they are respectively associated, and being independent of political designations and each comprising a character and a coefficient.

3. A map or chart containing the representation of a portion of the earth's surface which includes a plurality of political areas or divisions, and being subdivided into quadrangular unit areas, said unit areas being grouped in major divisions or regions, and identifying symbols, independent of political designations, associated with said unit areas; said symbols being all different from one another and each comprising a character and a coefficient, the coefficients of all the unit areas in one major division being the same.

4. A map or chart containing the representation of a portion of the earth's surface which includes a plurality of political areas

or divisions, and being subdivided into quadrangular unit areas, said unit areas being grouped in major divisions or regions, and identifying symbols, independent of political designations, associated with said unit areas; said symbols being independent of political designations and each comprising a character and a coefficient, the coefficient of all the unit area symbols in any one major division being the same, and the symbols being otherwise different, and the coefficients of the unit area symbols in different major divisions being different.

5. A map representing a portion of the earth's surface which includes a plurality of political divisions, intersecting lines subdividing said portion into quadrangular unit areas, regional boundaries surrounding different groups of said unit areas, and identifying numerals applied to the several unit areas; each numeral comprising several digits, the first digit being the same in the numerals applied to all the unit areas of any one group and being different in those applied to unit areas of different groups, while the numerals of the unit areas in the same group are otherwise different.

6. A map or chart of the surface of the earth or a portion of such surface divided by lines corresponding to the meridians of longitude and the parallels of latitude into unit area quadrangles of equal length and breadth, measured in degrees of arc on such meridians and parallels, and identifying symbols applied to said quadrangles, said symbols being all different from one another.

7. A map or chart of a part of the earth's surface bearing lines corresponding to parallels of latitude and meridians of longitude of the earth spaced equally apart from one another, such lines dividing the area represented into quadrangular unit areas, and identifying symbols applied to the several unit areas; said symbols being different from one another and independent of political designations.

8. A map or chart of a part of the earth's surface bearing lines corresponding to parallels of latitude and meridians of longitude of the earth spaced equally apart from one another, such lines dividing the area represented into quadrangular unit areas, and identifying numerals applied to the several unit areas, all different from one another, and each comprising not less than four nor more than six digits.

9. A map or chart of a part of the earth's surface bearing lines corresponding with parallels of latitude spaced one degree apart and meridians of longitude spaced two and one-half degrees apart, said lines dividing such surface into quadrangular unit areas, and identifying symbols, all different from

one another, associated with the several unit areas.

10. The combination with a map bearing a representation of a portion of the earth's surface including a plurality of political divisions, divided on conventional geographic lines into quadrangular unit areas, and a different identifying symbol independent of political designations applied to each of said unit areas, of a large scale map of one of said areas having means for subdividing the same into a number of fractional parts, and means for associating a secondary identifying symbol with each of said fractional parts.

11. The combination with a map bearing a representation of a portion of the earth's surface including a plurality of political divisions, divided on conventional geographical lines into quadrangular unit areas, and a different identifying symbol independent of political designations applied to each of said unit areas, of a large scale map of one of said areas having marginal divisions arranged to define the locations of longitudinal and latitudinal lines dividing said area into subsidiary index areas, and means for applying different secondary identifying symbols to said index areas.

12. The combination with a map bearing a representation of a portion of the earth's surface including a plurality of political divisions, divided on conventional geographical lines into quadrangular unit areas, and a different identifying symbol independent of political designations applied to each of said unit areas, of a large scale map of one of said areas having means on its margins for establishing the locations of lines subdividing said areas into intersecting rows and columns of subsidiary index areas, and characters placed on two of the adjacent margins of said large scale map in alignment respectively with the several rows and columns; said characters in combination forming distinguishing symbols for said index areas.

13. The combination of a map bearing a representation of a portion of the earth's surface and divided on conventional geographical lines into quadrangular areas, each having an individual identifying symbol, with a large scale map of one of such areas having its longitudinal extent divided into fifty equal parts numbered from east to west in recurring series from zero to 9, and its latitudinal extent divided into twenty equal parts and numbered from north to south in repeating series running from zero to 90 in intervals of ten.

14. The combination with a map representing an area of the earth's surface and division lines placed to correspond with geographical meridians and parallels, sub-

dividing the area represented into unit areas, and an individual identifying symbol for each of said unit areas, of a large scale map of one of such unit areas, and a translucent screen divided into a number of subsidiary spaces, each of said subsidiary spaces having a distinguishing symbol.

15. The combination with a map representing an area of the earth's surface and bearing division lines representing equally spaced meridians of longitude and equally spaced parallels of latitude, which divide said area into quadrangular unit areas, and an identifying symbol for each of said unit areas; of a larger scale map of one of said unit areas, and a translucent screen divided into subsidiary quadrangles, each approximately equal to the one thousandth part of said unit area, and a different identifying symbol applied on said screen to each of said subsidiary quadrangles.

16. The combination with a map representing a quadrangular area of the earth's surface, of a translucent screen subdivided into index quadrangles and bearing different identifying symbols on said index quadrangles, said screen being adapted to be placed on said map to apply said symbols to corresponding quadrangles of the map.

17. An atlas unit map of a portion or area of the earth's surface comprised between two parallels of latitude and two meridians of longitude, bearing longitudinal and latitudinal division lines dividing said area into ten approximately equal quadrangles, means for subdividing said quadrangles each into one hundred index quadrangles, and different identification symbols associated with said index quadrangles.

18. An atlas unit map of a portion or area of the earth's surface comprised between two parallels of latitude and two meridians of longitude, bearing longitudinal and latitudinal division lines dividing said area into ten approximately equal quadrangles, means for subdividing said quadrangles each into one hundred index quadrangles, and different identification numbers of three digits each applied to said index quadrangles, the first digit being the same in the numbers applied to all the index quadrangles in any one of the ten first named quadrangles.

19. A map or chart bearing the representation of a quadrangular unit area of the earth's surface and bearing on its latitudinal margin equally spaced divisions numbered at intervals of ten units from zero to 90, and bearing on its longitudinal margin equally spaced divisions numbered in unit intervals from zero to 9.

20. A map or chart bearing the representation of a quadrangular unit area of the earth's surface having a longitudinal

length of two and one-half degrees of longitude and a latitudinal width of one degree of latitude, said map having longitudinal and lateral division lines spaced half a degree apart, dividing the area into ten equal parts, and each of such parts being divided into one hundred equal quadrangles or "index squares", the said ten parts having coefficient numbers from 1 to 10, and the "index squares" having character numbers from zero to 100.

21. A map bearing a representation of an area of the earth's surface having longitudinal and latitudinal division lines with identification symbols upon the areas enclosed by such lines, and having on its north-and-south margin subdivision index numbers between such lines running in repeated series with ten-unit intervals from zero to 90, and on its east-and-west margin index numbers running from zero to 9 in repeated series.

22. A chart or map containing a representation of a geographical area divided into unit areas on conventional geographical lines, each unit area having a distinctive identifying symbol applied thereto, and a representation on said map of a line of communication, also indicated by an identifying symbol, the latter symbol having a charac-

teristic in common with that of the unit area, in which such line of communication is located.

23. A chart or map bearing a representation of a portion of the earth's surface bounded between two parallels of latitude at a predetermined angular distance apart, and between two meridians of longitude also at a predetermined angular distance apart, such area having a distinctive identifying number, and lines of transportation indicated on such map also having identifying numbers, in all of which one of the digits is the same as one of the digits in the characteristic numeral of the area.

24. A chart or map bearing a representation of part of the earth's surface and bearing an identification symbol comprising a coefficient and a character, and a line of transportation indicated on said map having also a symbol comprising a coefficient and a character, the coefficients of both symbols being the same.

In testimony whereof I have affixed my signature, in presence of two witnesses.

GEORGE W. R. HARRIMAN.

Witnesses:

ARTHUR H. BROWN,
P. W. PEZZETTI.