

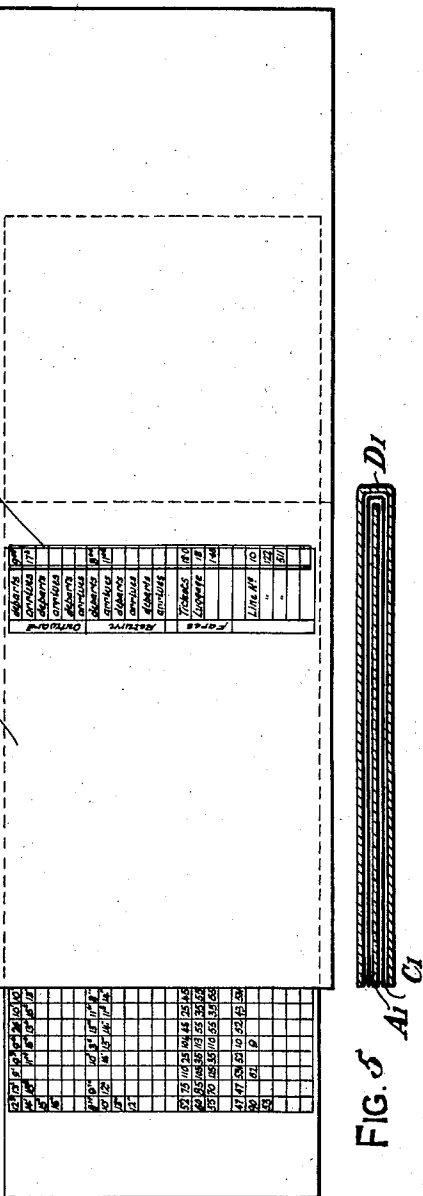
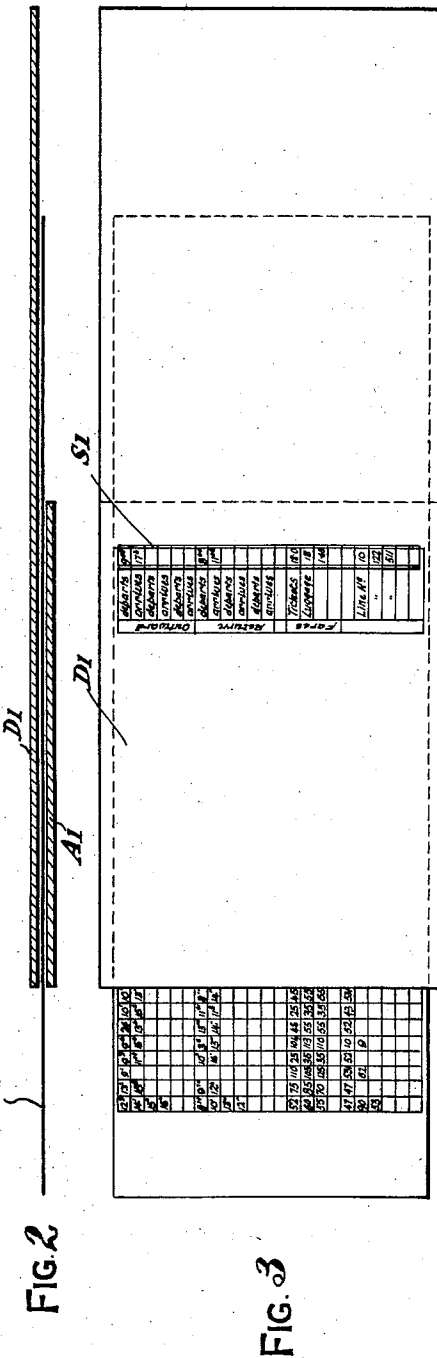
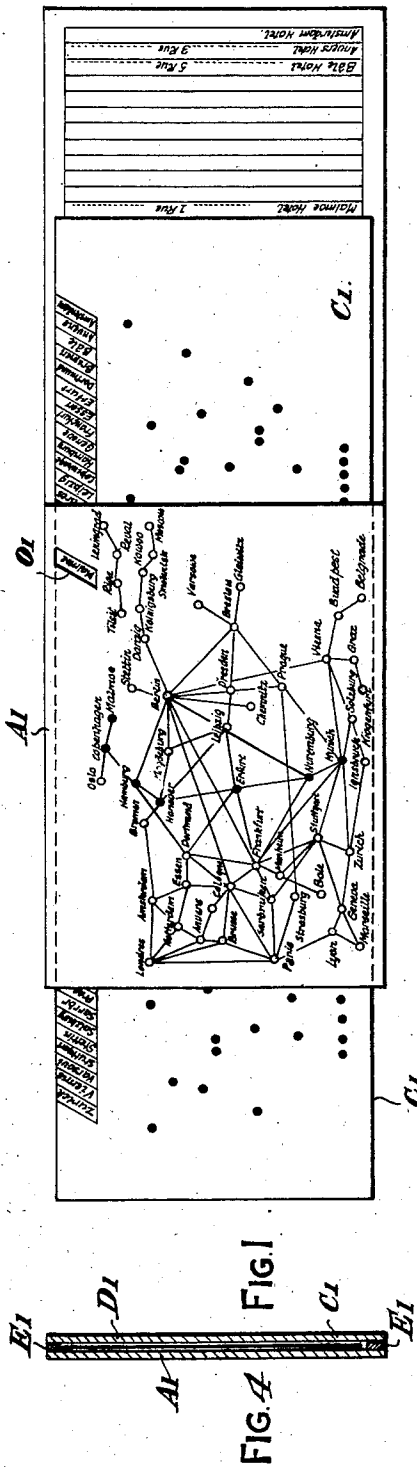
May 12, 1936.

T. WIRTH

2,040,419

INDICATING DEVICE

Filed Feb. 7, 1933



Inventor: THOMAS WIRTH
By: Sydney E. Page
Attorney.

UNITED STATES PATENT OFFICE

2,040,419

INDICATING DEVICE

Thomas Wirth, Munich, Germany

Application February 7, 1933, Serial No. 655,639
In Germany February 17, 1932

1 Claim. (Cl. 35—40)

This invention relates to an apparatus by means of which it is made easy and simple to find and single out any desired point, position, or a series of dots, lines or even figures in a graphical representation consisting of a multitude of such dots, lines or figures or a combination of them, which because of such mass of lines and figures is in itself indistinct and confusing. The necessity very frequently arises for selecting in a graphical representation consisting of a multitude of such signs, one or several or a series of them, which are interdependent or stand in some relation to each other as regards situation, or sequence or in point of time.

The primary object of the present invention is the provision of an indicating device made up of two members capable of relative movement, with one of such members underlying the other, the surface of the superimposed member graphically representing the entire data for which the device is designed and formed with data-indicating openings at predetermined points. The underlying device is provided with dot-like markings of a size to cooperate, in selected positions of the underlying member, with and render visible, preferably through the coloring of the dots, the opening or openings in the superimposed members with which the dot or dots on the underlying member cooperate at the particular position of the underlying member. Both members are formed so that selectively successive positions of the underlying member with respect to the overlying member may be determined by the co-operating indications on said overlying and underlying members, so that when the underlying member is in one indicating position, the colored or otherwise emphasized dots thereon will render visible and emphasize certain openings in the overlying member, all other dots on the underlying member being concealed, so that the holes in the overlying member which are not emphasized in the particular position of the underlying member by the dots thereon will not be emphasized or marked in any way, so that attention is directed immediately to the openings in the overlying member which are emphasized by the dots of the underlying member to thus give the desired information in the then particular position of the underlying member. Furthermore, certain of the dots of the underlying member and certain of the holes of the overlying member are in alignment in the direction of relative movement between the members, so that at least one dot on the underlying member may, in the dif-

ferent relative positions of the underlying and overlying members, serves to emphasize or mark different holes in the overlying member in the different relative positions of the underlying member.

The invention will be more clearly understood with reference to the accompanying drawing wherein like references denote like or similar parts and similar references modified by different suffixes indicate similar but modified parts.

In the drawing, which is by way of example only:

Figure 1 is a plan of the invention employing a sheath and slide;

Figure 2 is a longitudinal sectional elevation of Figure 1;

Figure 3 is an underneath plan of Figure 1;

Figure 4 is a transverse sectional elevation of Figure 1; and

Figure 5 is a longitudinal sectional elevation of Figure 1 with the device in closed position.

A preferred form of carrying out this invention is shown in the drawing. In this form a movable part or auxiliary member C¹ is inserted between a relatively stationary part or main member A¹ carrying a map and a back D¹ connected to part A¹. The auxiliary member is arranged to slide between two guides E¹ which form the connection between parts A¹ and D¹ of the main member. Upon the map representation of the main member A¹ the air travel routes of central Europe are shown and the individual places with their landing ports are marked by means of circular holes. Upon the front side of the auxiliary member C¹ the routes of all air ports which are in flying connection with Munich as a center, are shown by means of dots corresponding as regards their positions with the respective landing places on the map. To find easily any desired air route, the auxiliary member C¹ carries a list of all the places in alphabetical order in a rectangular column adjacent the top edge as shown, and in main member A¹ there is a rectangular opening O¹ through which one section of this column may be read at a time.

To make it easy for reading purposes, the form that has been given to this rectangular opening is an oblique parallelogram, and the names in the column are written obliquely to correspond. This opening may, however, be round, oval or any other convenient shape. If now the auxiliary member C¹ is so moved that the name desired registers exactly with the opening O¹ in the map sheet of the main member A¹, then the holes and

dots of the corresponding route will register exactly, and the dots showing through the holes will indicate clearly and distinctly from all other routes shown on the map, the particular route desired. It would, of course, be advantageous to choose for the dots on the auxiliary member C1 a color which stands out clearly from the color of the cover sheet of the main member A1. In order that at any time, no dots should appear in any holes, except those which are intended to show on the same line parallel to the line of movement upon the map sheet, one condition is that all the holes must be a distance apart which is not divisible by or is not a multiple of the number of divisions or parallelograms in the column on the auxiliary member C1. As, however, it is possible to make the auxiliary member C1 of any length desired, any number of routes can be shown. Through the back sheet D1 may appear simultaneously with the appearance of the route upon the map, indications as to the times of departure and arrival, the duration, the fares, which information is all arranged in a suitably distinct manner upon the auxiliary member C1 and appears through a slot S1 in the back sheet D1. Another method of showing simultaneously with the route upon the map sheet an explanatory text, is shown in Figure 1.

The back sheet D1 is extended beyond the map sheet of the main member A1 and carries on its front portion a number of parallel strips of a width corresponding to the number of divisions upon the auxiliary member C1. If now the auxiliary member C1 is moved from right to left, then a strip is uncovered by the right edge of the auxiliary member C1, the strip adjacent the right edge of the auxiliary member C1 bearing a text with indications referring to the registration place appearing in the opening O1. On these strips, for instance, can be shown the names of hotels in the respective air-ports as an advertisement, or else other indications with regard to the journey, prices, distances and so forth. The extended portion of part D1 beyond the map sheet of the main member A1 has another advantage. This portion of it can conveniently be folded over the map sheet and over the auxiliary member C1, as shown in Figure 5, and then serves as a protection cover and as a means of preventing the auxiliary member C1 from falling out or being damaged. Furthermore, upon this protection cover advertisements or addresses can be inscribed. Any adjustment may be fixed conveniently in position in a simple manner by means of a clamp.

It is, of course, understood that the dots on the auxiliary member must be so arranged that in any one selected position of the auxiliary member relative to the main member, all dots on the auxiliary member except those utilized in the particular position of the auxiliary member to emphasize holes in the main member, as previously described, are effectively concealed by the cover sheet of the main member. In this particular, as will be clear from Figure 1, it is possible to reduce the number of dots on the auxiliary member to a number less than that of the holes in the main member by utilizing at least one or more of the dots on the auxiliary member for cooperation with different holes in the main member in different positions of the auxiliary member relative to the main member. Thus, with the holes in the main member, or more particularly certain of them, arranged in alignment in the direction of movement of the auxiliary member, a particu-

lar dot on the auxiliary member can be utilized to cooperate with and emphasize each of said aligned holes in the main member in different positions of the auxiliary member.

The above serves to show this invention for the purposes of emphasizing points or routes upon a cartographic representation, where it was desired mainly to show the positions of certain definite objects.

A device in accordance with this invention has the important advantage that in a very simple manner a very clear graphic representation can be given of any portion. As applied to the example of a map or a plan, for instance, of a town or a landscape, the finding of certain important points or routes is very much simplified. Furthermore, a very large number of points or routes may be painted upon the same map without in any way creating confusion, or without decreasing the facility of finding any desired route. In fact, it is possible to put such mass of information or details upon a map of a small scale as would be put upon a map of a very large scale, because even the smallest details and mass of them, which are generally left out of a small scale map for the sake of clearness, may be put upon a small scale map used in this way, because it does not impair its clearness. This device, therefore, greatly facilitates the use of cartographic representations, and this is important, because hitherto it has been necessary for the sake of clearness to make maps in sections. The fact that simultaneously with the showing up of dots, or series of dots, or lines, upon the graphic representation, a textual explanatory table can also be shown, is a further great advantage of this invention. Such data, for instance, as distances along the routes which hitherto had to be either inscribed upon the map on that route, thereby greatly affecting the clearness of the map, or else had to be arranged in some column at the side of the map so that it had to be searched out afterwards, can by this present means be shown in a clear and simple and direct manner together with the road on the map.

Apart from the economy of time and the great convenience in the handling, a very important advantage of this device is that errors in co-ordinating the clearness of the routes and the information referring thereto, are virtually eliminated. This latter advantage is particularly great in connection with statistical tables and figures.

One form of utilizing this device or invention may be in showing up upon the plan of a town the places of interest, hotels, restaurants and places of amusement, tram lines, bus lines, and showing excursion routes, skiing routes, pointing out particularly the most advantageous routes, inns, etc. Further, this device may be used for railway, omnibus, shipping and air transport routes to show the routes, distances, prices, time-tables, etc., for the respective routes. It may be used for showing automobile routes and the best connections to various places. An excellent use of the device according to this invention is for instructional purposes, geographical lessons, lessons in history, mathematics and physics in which particularly important points, routes, curves, etc., may be emphasized. In many other spheres of activity where graphic or graphic statistical representations are used, as for instance in engineering, for showing particular curves, for showing oiling charts, in architecture, in medicine, this invention may be used with advantage. In the same way similar devices may be used for sporting

events and other events arranged to improve or to increase traffic.

What I claim is:

5 An indicating device including a main member of rectangular envelope form, the outer surface of one face graphically representing the entire data for which the device is designed and formed with data-indicating openings at predetermined points of such data, and an auxiliary member 10 wholly free of connection with the main member and of a size and shape to slide freely in and lengthwise the main member in guided relation thereto, the auxiliary member being provided with dot-like markings serving, when visible 15 through one or more of the openings in the main member, to visibly emphasize such particular opening or openings, the auxiliary member being further provided on a line adjacent one edge thereof with a successive series of respectively 20 distinguished indicators, the main member being formed with an opening through which any se-

lected indicator may be made visible to indicate a predetermined relation between the dot-like markings on the auxiliary member and the openings in the main member, certain of the openings in the main member being in longitudinal alignment in the direction of movement of the auxiliary member to thereby permit a dot-like marking of the auxiliary member to emphasize each of the aligned openings of the main member in different relative positions of the auxiliary member and 10 to the exclusion of other openings of the main member in the same longitudinal alignment, the dot-like markings on the auxiliary member being so relatively disposed that in any one position of the auxiliary member relative to the main 15 member, all dot-like markings of the auxiliary member other than those utilized to emphasize particularly openings in the main member are concealed by the main member.

20

THOMAS WIRTH.