

May 1, 1945.

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2,374,935

CHANGEABLE ROAD MAP AND INFORMATION DEVICE

Filed July 28, 1941

2 Sheets-Sheet 1

Fig. 1.

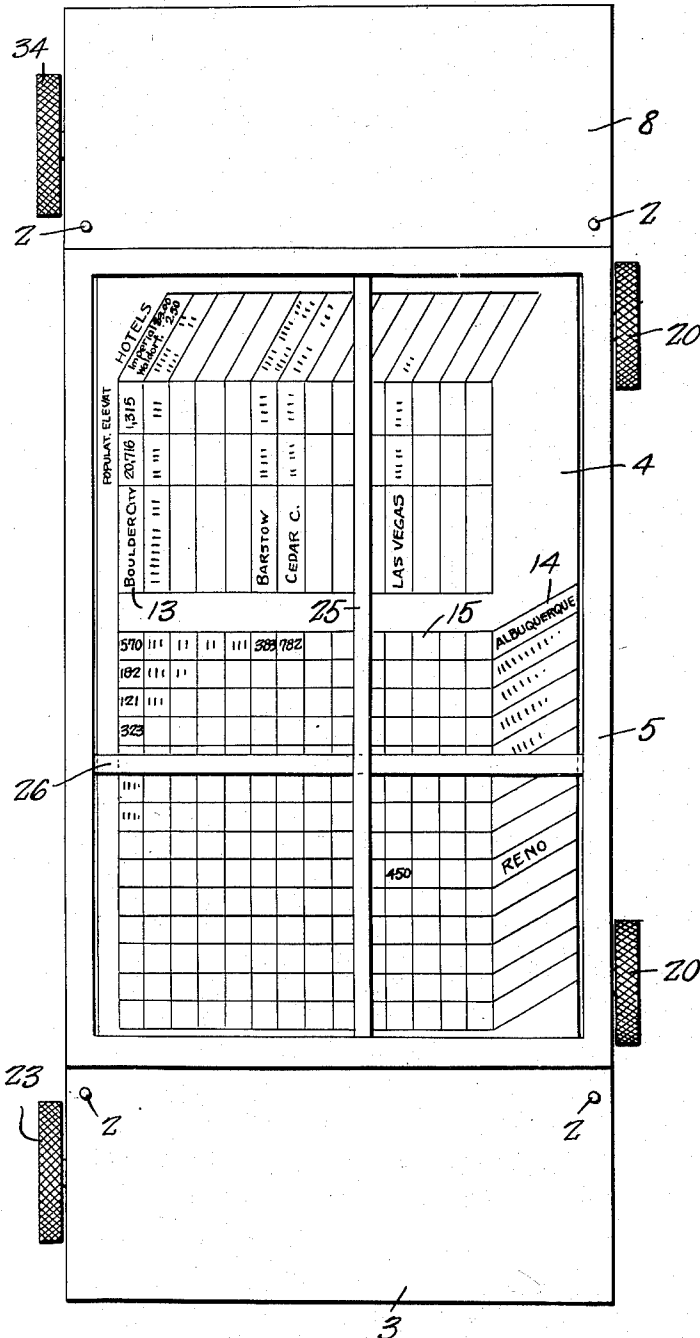
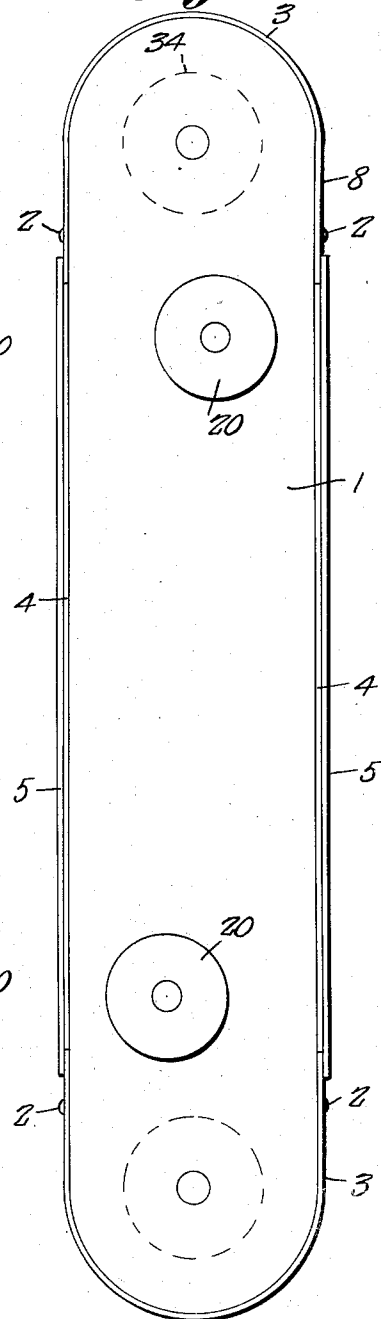


Fig. 2.



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2 Sheets-Sheet 2

Fig. 3.

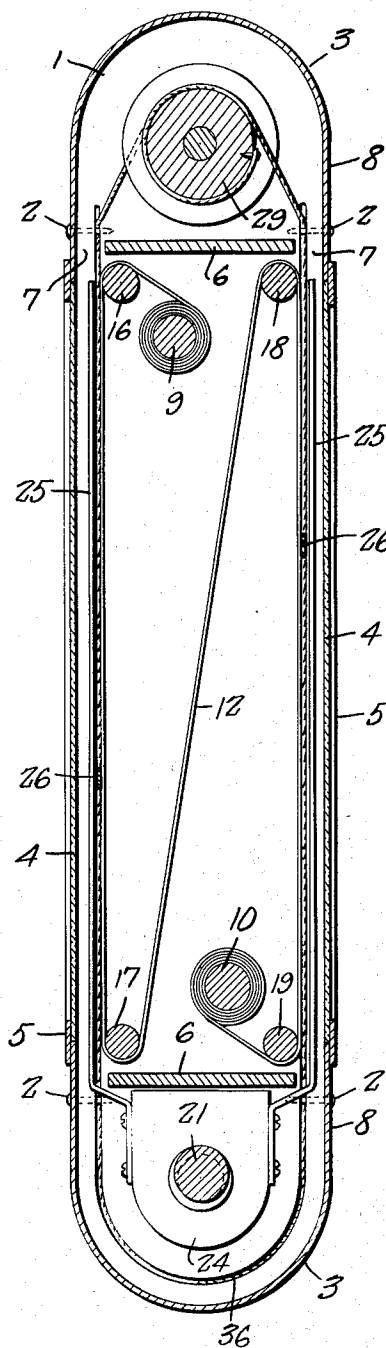
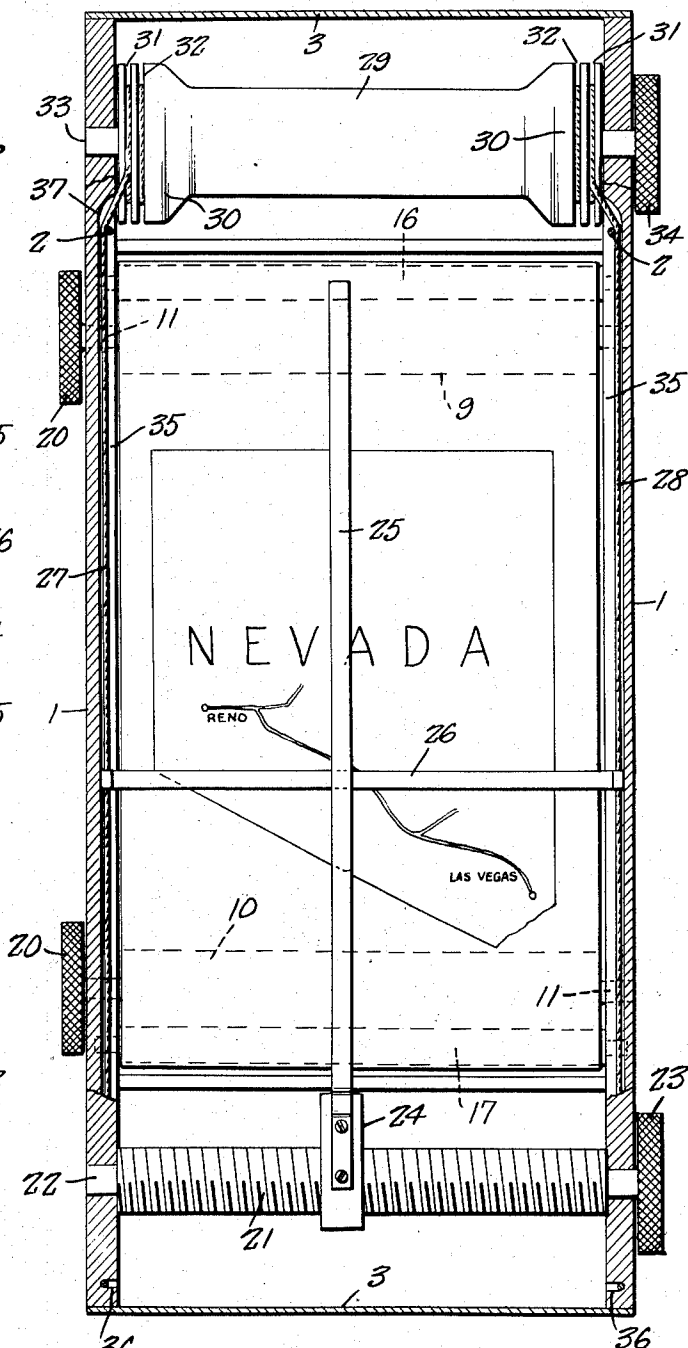


Fig. 4.



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UNITED STATES PATENT OFFICE

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CHANGEABLE ROAD MAP AND
INFORMATION DEVICE

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Application July 28, 1941, Serial No. 404,396

2 Claims. (Cl. 40—86)

This invention relates to a changeable road map and information device, and its general object is to provide a device that is primarily designed for use by motorists while touring to eliminate the difficulty experienced in handling and endeavoring to ascertain information from foldable sheet maps now in general use, as my device includes a tape or web having on one side thereof and along its length a multiplicity of spaced route maps of various divided areas, for example each of the States of the United States, and on its opposite side charts containing information relative to the areas, such as the names of and distances in miles between places situated in said areas, the tape being wound on spools for movement, to individually exhibit the maps which are seen through one face of the device, while the charts are individually exhibited to be seen through the opposite face thereof.

A further object is to provide a device of the character set forth, that includes means which not only facilitates locating a desired place on any one of the maps, to note its relative position thereon, but also to expedite ascertaining the mileage between any of the places named on the chart.

Another object is to provide a changeable road map and information device that is compact in form, easy to handle, neat in appearance, simple in construction, inexpensive to manufacture, and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a view illustrating the face of my device through which the charts are seen.

Figure 2 is a side view looking toward the left of Figure 1.

Figure 3 is a longitudinal sectional view taken through the device.

Figure 4 is a similar view taken at right angles to Figure 3.

Referring to the drawings in detail, it will be noted that my device includes an elongated flat substantially rectangular casing made up of relatively narrow parallel side walls 1 having rounded ends, to which are secured by nails 2 or the like, end walls 3, the latter being of sheet material in

the form shown and of a size and shape to follow the curvature of the ends of the side walls, as well as to extend inwardly beyond said ends a considerable distance, to provide parallel portions, as clearly shown in Figure 3. The spaces between the inner ends of the parallel portions of the end walls are closed by sheets 4 of transparent material, such as glass, Celluloid or the like, that fit within said spaces to provide windows or transparent opposite faces for the casing. The sheets 4 are adhesively or otherwise secured to marginal frames 5 which are in turn indicated as being adhesively secured to the extending ends or parallel portions of the end walls 3, as well as to the edge portions of the side walls 1, as best shown in Figures 1 and 3, so that the casing is completely closed. It is preferred however that the frames be detachably secured in place to allow ready access to the interior of the casing. Secured to and bridging the side walls 1 adjacent to the ends thereof are cross brace strips 6 of a width to be spaced from the parallel portions of the end walls, to provide passageways 7 for a purpose which will be later apparent. For distinction, the parallel portions of the end walls are indicated by the reference numeral 8.

Bridging the side walls between and adjacent to the strips 6 are spools 9 and 10 respectively, that are provided with trunnions 11 mounted for rotation in the side walls, and secured to the spools are the ends of a tape or web 12 of any suitable material, and having on one side thereof route maps of divided areas, such as the States of the United States, as indicated in Figure 4, which illustrates the map of Nevada, and on the opposite side of the tape are charts containing information relative to the divided areas.

One of the charts is shown in Figure 1, as an example of each of the charts, and it will be noted that the chart shown is divided by lines into rows of spaces 13 and 14 respectively, having names of places therein, and rows of spaces 15 having numbers therein, representing the distance in miles between the places, the rows of spaces 15 extending transversely of the tape from the spaces 14 and longitudinally of the tape from the spaces 13, so that in the event it is desired to ascertain the route mileage between two cities, for example between Boulder City and Albuquerque on the charts shown, the spaces 15 are followed transversely from the name Albuquerque to a space 15 that is aligned with the name Boulder City, and as the latter space has the number 570 therein, the distance between the two cities mentioned is 570 miles. The chart

also has other information thereon, such as the altitude and population of the cities named and the hotels therein, while of course the maps not only have the names of places thereon, but all routes between the places, as indicated in Figure 4, which shows a complete route from Reno to Las Vegas.

Arranged adjacent the corners of the space between the cross brace strips 6 are guide rollers 16, 17, 18 and 19 for the tape 12. From the spool 9 the tape is guided by the rollers 16 and 17, to be directed parallel with one transparent face of the casing and thence is disposed diagonally of the casing for disposal about the roller 18, to be directed by the latter, and the roller 19, parallel with the opposite transparent face of the casing. From the roller 19, the tape extends to the spool 10. By that arrangement, it will be obvious that all of the maps can be individually disposed to be seen through one face and all the charts can be individually disposed to be seen through the opposite face. The maps and charts are preferably arranged on the tape so that they will be synchronized, that is when the State of Nevada is arranged in view, the chart having information thereon relative to that State, will likewise be arranged in view.

One of the trunnions of each of the spools 9 and 10 extend through one side wall, and secured to the extending trunnions are serrated disk like knobs 20 for rotating the spools, and consequently for winding and unwinding the tape relative to the spools for disposing the maps and charts into and out of view, as will be apparent.

I also provide means to facilitate locating a desired place on the map arranged in view, and to easily and quickly ascertain the mileage between two cities on the chart. For that purpose, a threaded shaft 21 is arranged adjacent one end of the casing, the shaft having trunnions 22 mounted for rotation in the side walls, and a serrated disk like knob 23 is secured to one trunnion that extends through its side wall, as best shown in Figure 4. Threaded on the shaft is a nut like block 24 for travel along the length thereof, when the knob 23 is rotated, as will be apparent, and secured to the opposite narrow faces of the block 24 are finger bars 25 that extend longitudinally of the tape for disposal throughout the length of the exposed map and chart.

Cooperating with the finger bars 25 to form a right angle guide are strip cross bars 26 that extend transversely of the tape and have their ends fixed to a pair of cord cables 27 and 28 respectively. The cables have their ends connected to a spool like pulley drum 29 arranged at the end of the casing opposite to the shaft 21, the drum having enlarged ends 30 and each enlarged end is provided with annular grooves 31 and 32 respectively. The drum is also provided with trunnions 33 mounted for rotation in the side walls, and one trunnion has a serrated disk like knob 34 formed thereon to rotate the drum, to bring about movement of the bars 26, longitudinally of the tape, to cooperate with the bars 25, as and for the purpose set forth, it being obvious that the bars which are associated with the map are moved relative to the face thereof to locate a desired place thereon, and to ascertain its position with respect to the remaining area of the map, while the bars which are associated with the chart are moved relative to the face thereof to ascertain the mileage between two places. When the desired place is

located on the map, the bars can be arranged for disposing the same in any one corner of the angle provided by the bars, so that by merely glancing at the map at any future time, the located place can be instantly seen. The mileage between the two places is ascertained merely by moving the bars relative to the chart until the bar 25 parallels the name of the selected place in a space 13 and the bar 26 is associated with the name of the selected place in a space 14, then by glancing at the space 15 disposed relative to a corner of the angle provided by the bars, the mileage between the two places will be found.

The cables 27 and 28 have one of their ends fixed within the outer grooves 31, while their opposite ends are fixed within the inner grooves 32, so that the cables will be wound and unwound with respect to the drum for moving the bars 26 along the length of the tape. The cables are slidably mounted for travel in grooves 35 along the length of and disposed adjacent to the edges of the side walls, as well as in rounded formation as at 36 adjacent the ends of the side walls opposite the drum 29, as best shown in Figure 3. The grooves 35 terminate at their ends adjacent the drum 29, in curved formation as at 37 and the cables are held in the grooves 35 by the pins 2, which not only secure the end walls in place, as previously set forth, but bridge the grooves 35, for the cables to ride thereon, as clearly shown in Figures 3 and 4.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A device for displaying a series of maps and at the same time synchronously displaying data with respect to points thereon and simultaneously bracketing both the position on the map and particular information relating thereto, comprising a casing having windows in opposite sides thereof, a movable tape arranged to display any one of a number of maps through one window, and data relating to that particular map through the other window, of means for simultaneously bracketing a position on the map, and the data relating to such position, said means comprising crossed horizontal and vertical pointers associated with each window, the horizontal pointers of all windows being operatively connected together to operate as a unit, and the vertical pointers being operatively connected together to operate as a unit, and independent means for moving said pointers relative to each other and to the map and data display.

2. A device for displaying a series of maps and at the same time synchronously displaying data with respect to points thereon, and simultaneously bracketing both the position on the map and particular information relating thereto, comprising an elongated, flat casing having windows on opposite sides thereof, a movable tape mounted in the casing and disposed to display any one of a number of maps through one window, and data relating to that particular map through the other window, of means for simultaneously bracketing a position on the map visible through one window, and the data relating to such position visible through the other window, said means

comprising horizontal and vertical crossed pointers associated with each window, the horizontal pointers of all windows being operatively connected together to operate as a unit, and the vertical pointers being operatively connected together to operate as a unit, said means including a block on which the vertical pointers are carried, one on each side thereof, and a screw for feeding the block horizontally, and cables on

5 which the horizontal pointers are mounted, and pulleys for moving the pointers horizontally, and operating means including individual actuating means for the screw, the pulleys, and the movable tape, whereby certain maps, certain data with respect thereto, and certain positions on the map and certain data with respect to certain positions may be bracketed.

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