April 4, 1950 V. P. DRURY 2,503,101

MAP HOLDER

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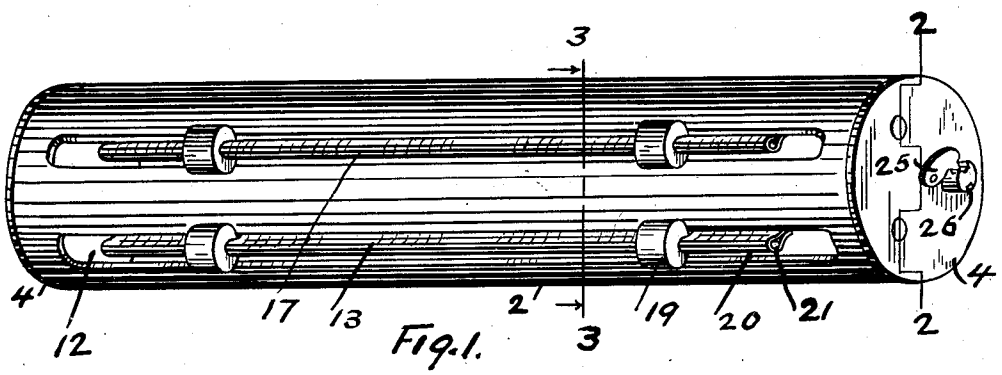


Fig. 1.

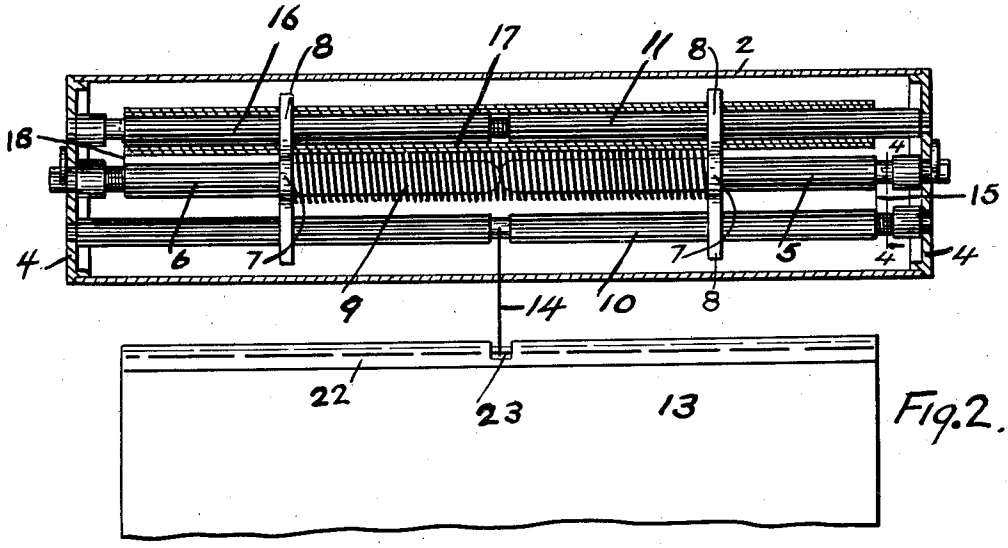


Fig. 2.

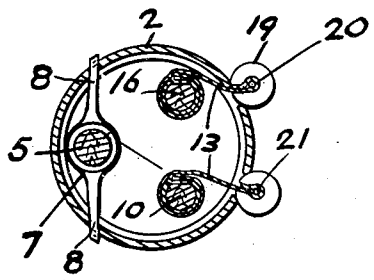


Fig. 3.

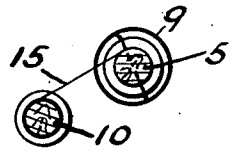


Fig. 4.

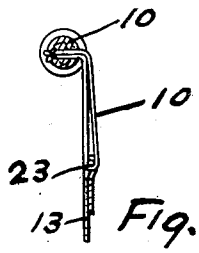


Fig. 5.

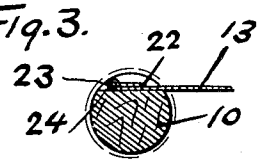


Fig. 6.

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MAP HOLDER

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5 Claims. (Cl. 40—85)

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This invention relates to an improved road-map holder, and the objects of the invention are:

1. To design a device for use especially in motor cars by means of which road maps may be housed, and individually readily withdrawn therefrom for study on either side.

2. To control the withdrawal and housing of one of a plurality of maps by elastic means common thereto, thus providing a very compact and relatively inexpensive article.

3. To provide means to prevent the elastic means, in action, withdrawing a map completely within the housing so that one end may be exposed and readily grasped when required, or when it is desired to study a route without the tiresome act of having to oppose the urge of the elastic means to wind the map up, and

4. To provide means whereby a complete change of maps may be readily effected.

Various other objects of the invention will be set forth in the following specification:

Fig. 1, is a perspective view of the article unmounted.

Fig. 2, is a vertical longitudinal section on the line 2—2, Fig. 1.

Fig. 3, is a vertical cross-section on the line 3—3, Fig. 1.

Fig. 4, is a schematic detail in cross-section showing the action of one of the map spindles in storing up energy in the spring when a map is withdrawn from the casing.

Fig. 5, is a detail, partly in section, showing how a map is connected to its spindle, and

Fig. 6, is a detail in cross-section, through one of the map spindles showing how the inner end of the map is preferably mounted thereon.

In the drawings, like characters of reference refer to the same parts.

The casing 2, may be of any suitable shape, but for cheapness of manufacture it is circular in cross-section. The ends of the casing are closed by the caps 4, in a manner well known. There are two power spindles 5, and 6. These spindles are held in alignment, and are suitably mounted at their outer ends in the caps 4. At suitable inner locations the said power spindles are held in suitable bearings, such as provided by brackets 7. These brackets are provided with arms 8, which are held in the casing 2, as shown particularly in Fig. 3. Mounted on the said spindles 5, and 6, between the brackets 7, is a spiral spring 9. One end of this spring is suitably secured to the power spindle 5, and the other end of this spring is suitably secured to the power spindle 6. As shown in Fig. 2, the opposed ends of the spindles 5, and 6, touch, and because they are distinct spindles, the rotation of one can be effected without rotating the other.

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In the disclosure the casing is shown as provided with two map-spindles, 10, and 11. These spindles are mounted at their ends in the caps 4.

The casing 2, is provided with at least one slot 12, extending longitudinally thereof, to provide for the manipulation of a map 13. With reference to the spindle 10, the same is intermediate its length reduced in cross-section, and is provided with a loop 14, as shown in Fig. 5. When the map 13, is housed within the casing 2, as shown in Fig. 1, the loop 14, is wound around the reduced central portion of the spindle 10. As the map is withdrawn, it is unwound and rotates the spindle 10, and the belt 15, wound around the spindle 5, is unwound therefrom and wound around the spindle 10, thus storing up energy in the spring 9. As the pull of the operator against the map 13, is relaxed, the power spindle 5, is rotated by the spring and consequently through the medium of the belt 15, the spindle 10, is rotated and the map 13, withdrawn through the slot 12, and wound around the spindle 10.

The device illustrated is adapted to carry two separate maps. In the upper portion of Fig. 2, is shown a map spindle 16, the ends of which are suitably journalled in the caps 4. Around this map spindle is shown a map 17, in section. If it is desired to withdraw the map 17, energy may be stored up in the spring 9, through the winding around the spindle 16, of the belt 18, from around the spindle 6. Of course, the map 17, is attached to its spindle 16, after the manner disclosed with respect to the map 13.

Any suitable means may be provided to prevent the escape of the maps through the slots in the casing 2. The preferred means for this purpose comprises buttons 19. These buttons are longitudinally slotted so that they may be slid longitudinally over the folded ends 20, of the outer ends of the maps. These folded ends are stiffened by a rod 21, held therein.

The inner ends of the maps are folded over as shown at 22, and suitably secured in place, and to stiffen the same each is provided with a rod 23.

When it is desired to replace a map, the rod 23, is withdrawn from the loop 14.

Of course any suitable means may be provided to couple and uncouple the maps with respect to the device.

In order to promote effective operation of the belts 15, and 18, the spindles around which they are wound are reduced in diameter as illustrated.

To promote the evenness of the winding of the maps around their spindles, these spindles are flattened longitudinally as shown at **24**, (Fig. 6), so that the folded portions **22**, will always lie thereagainst when the maps are used. This construction reduces the distance the said folded portions **22**, project beyond the said spindles, and to that extent reduces the "lumpiness" of these folded ends around which the maps are to be wound.

Since means must be used to prevent the elastic means withdrawing a map completely within the casing, it will be evident that with the map unrolled as shown in Fig. 2, the spindle **6**, is prevented from rotation since the belt **18**, is merely looped over the spindle **16**, and since this spindle carries a map wound thereon, and since the outer end of this map is held in the position shown in Fig. 1, the energy exerted by the spring **9**, or its equivalent to withdraw the map **13**, can not be exerted and rotate the spindle **6**. The construction shown in Fig. 2, shows that there is a legitimate combination between the various spindles; the elastic element, and the maps carried by certain of said spindles, under all conditions.

It will be obvious from what has hereinbefore been stated that only one map-spindle and its map may be used with the spindle **5**, and spring **9**, when the spindle **6**, is held from rotation at any time.

Although two map-spindles with their maps are shown, one only need be used, but in practice it has been found that especially where maps are provided that are used for a motor trip of a very great distance, a number of maps are needed. On each side of a sheet on which maps are re-produced a different map is provided and consequently with the construction shown, four distinct maps are provided. A journey may be started in territory disclosed by a first map and the final phase of the journey may be disclosed on the reverse side of a sheet disclosing the last map. In other words, the sides of the sheets may be used consecutively to follow a given route. To conveniently map out a route such as instanced on one map would require it to be of undue length and so unmanageable. It must be kept in mind that the windows of a motor car are always open in mild weather and consequently strong air currents pass through the car, and so render long maps impracticable.

When a map is completely withdrawn from the casing **2**, because of the loop **14**, it may be readily reversed.

In case it be desired to study a map very carefully, and to avoid having to oppose physically the action of the spring **9**, to withdraw the map, any suitable means may be used to latch either of the power spindles **5**, or **6**, against rotation. Such means may be in the form of a dog **25**, pivoted to the caps **4**, and adapted to engage notches **26**, formed in the exposed ends of said power spindles.

While herein has been described the preferred embodiment of this invention it must be understood that various changes in construction may be made therein without departing from the spirit thereof.

I claim:

1. A map holder comprising two spindles; a map wound around each of said spindles; two aligned juxtaposed spindles; a spiral spring mounted to surround said aligned spindles and secured at each end to one of said aligned spindles; means connecting each of said first-mentioned spindles at one end thereof with said aligned spindles

whereby when either of said first-mentioned spindles is rotated by unwinding its map its connected one of said aligned spindles will be rotated and store energy in said spring; means whereby the idle spindle of said first-mentioned spindles is held from rotation while the map on the active spindle is in use, and means for housing said elements and in which all of said spindles are journalled.

2. A map holder comprising two spindles; a map wound around each of said spindles; two aligned juxtaposed spindles; brackets in which the inner portions of said juxtaposed spindles are mounted; a spiral spring mounted on said juxtaposed spindles between said brackets and secured at each end to one of said juxtaposed spindles; a belt attached to one end of each of said first-mentioned spindles and respectively wound around the outer ends of said juxtaposed spindles whereby when either of said first-mentioned spindles is rotated by unwinding its map its belt will rotate the juxtaposed spindle with which it is connected and thereby store energy in said spring; means whereby the inactive spindle of said first-mentioned spindles is prevented from rotating to prevent its belt from rotating the idle juxtaposed spindle while the map on the active spindle is in use, and means for housing said elements and in which all of said spindles are journalled at their outer ends and said brackets are supported.

3. A map holder comprising a casing closed at each end and having two longitudinal parallel slots in one side thereof; two parallel spindles, spaced apart; a map wound around each of said spindles with their outer ends projecting through said slots; two aligned juxtaposed spindles; brackets in which the inner portions of said juxtaposed spindles are mounted; a spiral spring mounted on said juxtaposed spindles between said brackets and secured at each end to one of said juxtaposed spindles; a belt attached to one end of each of said first-mentioned spindles and respectively wound around the outer ends of said juxtaposed spindles whereby when either of said first mentioned spindles is rotated by unwinding its map its belt will rotate the juxtaposed spindle it is connected with and store energy in said spring; means at the outer end of each map to block the withdrawal thereof through its slot whereby the inactive spindle of said first-mentioned spindles is prevented from rotating and thereby prevent its belt from rotating the idle juxtaposed spindle while the map on the active spindle is in use, the outer ends of all of said spindles mounted in the outer ends of said casing.

4. A device of the class described comprising a suitable supporting member adapted at each end to provide a bearing; two aligned juxtaposed spindles journalled at their outer ends in said bearings; means to prevent the rotation of one of said juxtaposed spindles; brackets carried by said supporting member in which said aligned spindles are held; a spiral spring mounted on said aligned spindles between said brackets and secured at each end to one of said aligned spindles; a spindle journalled at each end in said bearings in parallel relation to said juxtaposed spindles; a map flexibly centrally coupled to and wound around said spindle; a belt normally wound around one end of the active one of said aligned spindles and connected with the adjacent end of said map-spindle, energy being stored up in said spring by the unwinding of said belt from around its spring-spindle and winding it around the map-spindle as the map is un-

wound, to be ultimately utilized to rewind the map on its spindle.

5. A map holder comprising a spindle; a map wound therearound; two aligned juxtaposed spindles lying in parallel relationship to the first mentioned spindle; a spiral spring mounted to surround said aligned spindles and secured at each end to one of said aligned spindles; a belt connecting the outer end of said first mentioned spindle with the outer end of one of said aligned spindles whereby when said first mentioned spindle is rotated by the unwinding of its map therefrom, the aligned spindle coupled thereto will be rotated to store energy in said spring; means whereby the other of said aligned spindles is prevented from rotation, and means for housing said elements.

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