INDICATING DEVICE CONSTITUTED BY A SCALE AND AN INDEX WHICH CAN MOVE ALONG A GUIDE PATH
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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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INDICATING DEVICE CONSTITUTED BY A SCALE AND AN INDEX WHICH CAN MOVE ALONG A GUIDE PATH

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This invention relates to an indicating device constituted by a scale and an index which can move along a guide path, the index being secured to a closed rope system. Such a rope system may be constituted either by an endless rope guided over a plurality of guide rollers, one of which can be driven, or by a rope which may be unwound from one roller and wound on another.

Since the rope must always be stretched so that variations in length upon displacement of the index must be avoided, use was made hitherto of a straight guide path, which constitutes a drawback in constructing several devices, for example wireless sets, which have to satisfy certain aesthetic requirements.

According to the invention, the guide path has a curved shape, the rope connected to the index being guided in such a manner that its length remains constant upon displacement of the index.

According to one embodiment of the invention the guide path may constitute a part of an ellipse, whilst the rope by means of which the index is connected, is guided on each side of the index over rollers placed in the focuses of the said ellipse.

Consequently, these parts of a rope system constitute, apart from the dimensions of the rollers, the radii of an ellipse, whose sum, as is well-known, is constant. Consequently, when the index is displaced, the length of the rope system and also its tension remain substantially constant.

According to another embodiment of the invention, a slide path may be provided in parallel with the guide path, the rope being guided over the convex side of the said slide path.

Owing to a fact which will be described more fully hereinafter, the use of the invention allows of a very simple construction of the guide path, i.e., in the form of a slit in the cabinet of the apparatus on which the indicating device is arranged.

The invention will be explained more fully by reference to the accompanying drawing showing, by way of examples, two embodiments thereof.

Figure 1 is an elevation view of a wireless set comprising a curved scale and a guide path for the index in the form of a part of an ellipse.

Figure 2 shows diagrammatically the arrangement of the parts of the drive for the index.

Figure 3 is a sectional view of a detail of the index and of the guide path.

Figure 4 shows a longitudinal section of a further embodiment of the invention, whilst

Figure 5 is a sectional view of this embodiment.

The wireless set comprises a cabinet 1 which may be moulded from synthetic resin. The top of this cabinet, which carries a scale 2, has a curved shape to which the scale has been adapted. The scale is covered by an index 3, which is driven by an operating mechanism 4.

With the index derives of the common type, a pair of rollers are provided near the extremities of the scale which rollers have stretched between them a part of the rope on which or to which the index is secured. It is evident that when the index has to move along a curved path, considerable differences in the tension of the rope will occur.

It appears from figure 2, that in the device according to the invention such drawbacks are suppressed. The guide path of the index constitutes a part of an ellipse 5, in whose focuses two rollers 6 are placed. An endless rope 7 is guided, via the operating mechanism 4 and the rollers 6, to the index 3. The parts 8 and 9 of this rope approximately constitute the radii of the ellipse, whose sum, as is well-known, is constant. It is evident that upon displacement of the index the tension of the rope remains constant.

It is, of course, not necessary to use an endless rope. Even in most cases use will be made of a rope the two extremities of which are secured to the operating mechanism 4 so as to be stretched by means of springs. As an alternative, the two extremities of such a rope may be wound on two different drums.

From figure 2 it appears that the rope has a tendency of pulling the index to the centre of the ellipse, which permits of a very simple construction of the guide path and of the index, which will be explained more fully by reference to figure 3.

This figure 3 is a sectional view of the cabinet and of the scale in a plane normal to the guide path. The cabinet 1 has provided in it a slit 10 which serves as the guide path. The index 3 is arranged on a plate 11 having a tail-like extension 12 passed through the slit. To this extension, by means of a screw 13, is fixed the rope, of which only the parts 8 and 9 are shown. The index is drawn against the cabinet by the rope without any further expedients for guiding being required. Under the plate 11 is a little disc of felt 14 for the purpose of reducing the friction.

In the form of construction shown in figures 4 and 5, the cabinet 1 comprises, as before, a slit 10 serving as a guide for the index. Parallel to this guide there is arranged a slide path 15 over
the convex side of which the parts 8 and 9 of
the rope are guided. The slide path 16 may con-
sist of a strip of sheet metal, secured to the cabi-
net by means of a plurality of tags 17. It may
comprise a groove 18 to accommodate the rope.
This rope is guided from the extremities of the
slide path via rollers 6. The index 3, which cov-
ers the scale 2, is introduced from the bottom
into the slit 16 and bears against the inside of
the cabinet by means of a plate 11 and a piece of
felt 14. As before, the index comprises a tail-
like extension 12 under which the rope is clamped
in position by means of a tag 15. In the vicinity
of the index the rope is lifted a little from the
slide path, due to which a small pressure is exerted
on the index, pushing the latter against the
inside of the cabinet. It is evident that the slide
path also may form part of the cabinet itself.

What I claim is:

1. An indicating device comprising a scale, a
support having a guiding surface located adjacent
said scale and shaped as a portion of an ellipse
in the vicinity of one end of the minor axis there-
of, an index movably mounted on said guiding
surface to move over an elliptical path adjacent
the scale and corresponding to the elliptical shape
of the surface, a guide member supported at one
focus of the ellipse, a second guide member sup-
ported at the other focus of the ellipse, a closed
cord system encircling said guide members, said
index being fixed to said cord system at a point
lying in a line perpendicular to a line joining
the foci of the ellipse, and means to move said cord
system and including a member engaging said cord system.

2. An indicating device comprising a scale, a
support having a guiding surface located adjacent
said scale and shaped as a portion of an ellipse
in the vicinity of one end of the minor axis there-
of, an index movably mounted on said guiding
surface to move over an elliptical path adjacent
the scale and corresponding to the elliptical shape
of the surface, a guide member supported at one
focus of the ellipse, a second guide member sup-
ported at the other focus of the ellipse, a closed
cord system encircling said guide members, said
index being fixed to said cord system at a point
lying in a line perpendicular to a line joining
the foci of the ellipse, and means to move said cord
system and including a member engaging said cord system.

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REFERENCES CITED

The following references are of record in the
file of this patent:

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,695,919</td>
<td>Gould</td>
<td>Dec. 18, 1928</td>
</tr>
<tr>
<td>2,397,306</td>
<td>Whipple</td>
<td>Mar. 28, 1946</td>
</tr>
</tbody>
</table>