TRAVELER WITH FRICTIONAL RESISTANCE MEANS

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This invention relates to travelers having means for providing frictional resistance by application of a braking effect upon the traveler ring. More particularly, the invention deals with a traveler having means tensionally engaging the ring by a spring element constituting an integral part of the traveler or by a spring loaded element. Stil more particularly, the invention deals with a traveler of the character defined employing an element actuated by centrifugal force in establishing the frictional resistance or drag of the traveler on the ring.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawings, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

FIG. 1 is a sectional view through a traveler ring, illustrating one form of traveler which I employ.

FIG. 2 is an enlarged view showing only a part of the ring and traveler and showing a modification.

FIG. 3 is a view, similar to FIG. 2, showing another form of construction which I employ.

FIG. 4 is a view looking generally in the direction of the arrow 4 of FIG. 3.

FIG. 5 is a view, similar to FIGS. 2 and 3, showing another form of construction; and

FIG. 6 is a view looking generally in the direction of the arrow 6 of FIG. 5.

In FIG. 1 of the drawing, I have shown in cross-section at 10 a traveler ring, upon which the elevation of a complete traveler 11 is shown. The traveler 11 is preferably formed of cast or molded plastic, such as nylon, Delrin or the like, and comprises a shank portion 12, having a large hook end 13 and a small hook end 14. In the construction shown, the large hook end 13 includes a wear resistant element 15 formed as an insert in the molded traveler. However, with some form of travelers, this insert need not be employed.

Formed as an integral part of the small hook end 14 is a tensional resistance element 16 which integrally joins the hook end 14 in a spring neck portion 17. The element 16 has a rounded end 18 adapted to engage the ring 19 and a long end 19 which, through action of centrifugal force in the direction of the arrow 20, will cause the element 16 to hinge on the neck 17 to force the rounded end 18 into engagement with the ring 19.

In FIG. 2 of the drawing, I have shown at 21 part only of a ring, similar to the ring 19, and at 22 I have shown part of the small hook end of a traveler 23, otherwise generally similar to the traveler shown fully in FIG. 1 of the drawing. In FIG. 2, the resistance element 24 integrally joins 22 in a reduced spring portion 25 to provide a spring loading on the element 24 in movement of the rounded end 26 of said element into engagement with the surface of the ring 21. The spring portion 25 is formed by grooves 27 generally circular in cross-section 27 between 22 and 24 with the rounded ends 22, 24 spaced apart, as diagrammatically seen in FIG. 2 of the drawing. The element 24 also includes a rounded surface 28, which maintains clearance of the element 24 from the ring 21, except the frictional engagement established at 29 on the rounded end 26.

In FIGS. 3 and 4 of the drawing, I have shown another form of construction and, in these figures, 30 represents part of the traveler ring, similar to the ring 10. 31 represents the lower small hook end portion of the traveler ring, the upwardly extended rounded end portion 32 of the small hook end being spaced from the surface of the traveler ring 30, as will appear by the clearance cut at the surface 33 with respect to the ring 30. Pivoted to the portion 32 of 31, as at 34, are two levers or resistance elements 35, one of the levers being shown in side elevation in FIG. 3 of the drawing. Each of these levers have rounded short ends adapted to bear upon the ring 30, as seen at 36 in FIG. 3 of the drawing. The long end portions 37 of the levers support a pin 38, upon which a number of weighted washers 39 are mounted. Two of these washers are disposed between the ends 37, as noted in FIG. 4, and two others at outer surfaces of the levers. In this connection, it will be understood that the number of the washers can be employed, depending upon the length of the pin 38. With this construction, the action of centrifugal force in the direction of the arrow 40 of FIG. 3 will urge the end 36 of the levers into engagement with the ring in establishing the frictional resistance required, thus applying the braking pressure or drag which is desired.

In FIGS. 5 and 6 of the drawing, I have shown another adaptation of my invention and, in these figures, I have indicated, in part, at 41 the traveler ring and at 42 the small hook end of the traveler 43, which is generally of the same construction as shown in FIG. 3 of the drawing, in other words, includes an upwardly extended end portion 44, having a surface 45 which clears the traveler ring. With this construction, instead of employing levers, as at 35, two friction dogs or resistance elements 46 are pivotally mounted on a pin 47 mounted in the end 44, the pin projecting beyond the dogs 46 to provide mounting for coil portions 49 of a tension spring 49 thereon, as diagrammatically illustrated in FIG. 6 of the drawing. The loop end portion 50 of the spring 49 engages the small hook end 42 of the traveler 43, as clearly illustrated in FIG. 5 of the drawing; whereas, the ends 51 of the spring bear upon the dogs 46 to cause end portions 52 of the dogs 46 to engage into the ring 41, this engagement of one of the dogs 46 being illustrated in FIG. 5. In other words, the structure of FIGS. 5 and 6 is generally similar to the teachings in FIG. 2 of the drawing, with the exception that independent element is employed, such as the spring, to apply the constant tensional engagement which is provided by the element 24.

With the several forms of construction shown, it will appear that the various resistance elements employed will engage to the traveler ring the desirable braking effect or drag and, thus, accomplish in an otherwise small light weight traveler the properties of a large heavily weighted traveler.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A molded plastic traveler having large and small hook end portions connected by a shank portion for movement on a traveler ring, and the small hook end of the traveler including an element operatively engaging the ring and means for clamping a portion of said ring between said element and said shank portion of the traveler in applying a braking effect to the traveler upon said ring during operation of said traveler on said ring.

2. A traveler as defined in claim 1, wherein said element includes means establishing constant tensional engagement of the element with said ring.

3. A traveler as defined in claim 1, wherein said element includes means actuated by centrifugal force in establishing frictional engagement on the traveler ring.

4. A traveler as defined in claim 2, wherein said element constitutes an integral part of the small hook end
of the traveler and joins said small hook end of the traveler in a reduced spring portion.

5. A traveler as defined in claim 2, wherein said element comprises a dog pivoted on the small hook end of the traveler, and a torsion spring operatively engages the small hook end of the traveler and said dog in urging the dog into tensional engagement with said ring.

6. A traveler as defined in claim 3, wherein said element constitutes an integral part of the small hook end of the traveler and joins said small hook end of the traveler in a reduced spring portion.

7. A traveler as defined in claim 6, wherein said element includes a short rounded end engaging said ring, and a long end actuated by centrifugal force in urging the short rounded end into frictional engagement with said ring.

8. A traveler as defined in claim 3, wherein said element comprises a lever pivoted to the small hook end of the traveler, the lever having a short rounded end operatively engaging said ring, said lever having a long end supporting weighting means at its free end portion, and said weighting means being actuated by centrifugal force in urging the short rounded end of the lever into frictional engagement with said ring.

9. A traveler as defined in claim 8, wherein a pair of said levers are disposed one at each side of the small hook end of the traveler.

10. A traveler as defined in claim 9, wherein the weighting means comprises a plurality of washers arranged upon a pin supported in the free end portion of said levers.

11. A traveler as defined in claim 5, wherein two of said dogs are arranged one at each side of the small hook end of the traveler, and the pivot of said dogs comprising a pin having ends supporting coil portions of said spring.

12. A traveler as defined in claim 11, wherein said torsion spring has a loop portion engaging the small hook end of the traveler, and said spring having ends operatively engaging said dogs.

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